

ONLY  
58p

# COMPUTER EXPRESS

BRITAIN'S BIGGEST SELLING COMPUTER WEEKLY

## AMIGA

- AMOS delayed
- Monster Cartridge
- Austerlitz review

## ST

- Macintosh emulator
- Colour digitiser
- Playing with Time

## PC

- Clip-art collection
- Dictionary delight
- An answer for ANSI

## CPC

- Monitors found!
- Beverly Hills review

## SAM COUPE

- Disk drive arrives

BBC•C64•MSX  
ARC•XE•PCW  
SPECTRUM•QL

SPECIALIST COLUMNS

## GET THE MOST OUT OF YOUR PC

The essential **EXPRESS GUIDE** to choosing the right **DISKS** and **DISK DRIVES** page 52

# MONITORS: NEW HEALTH HAZARD

Using a **COMPUTER** is as **DANGEROUS** as living in the **SHADOW** of a pylon page 3



## ACORN GOES CD

Stunning new drive for the Archimedes page 49

# TOP WORD PROCESSORS

Read Shopping Express for 28 pages of Britain's best computer bargains





# CONTENTS

## FEATURES

### ARC OPENS THE CLASSROOM DOOR 49

A new CD-ROM drive that just might revolutionise computing in schools

### SPECTRE CHASES THE MAC 50

True emulation on the ST: will the mighty Mac recoil from this frightful development?

### INSIDE THE PC-COMPATIBLE 52

This week's instalment of our guide looks at drives and storage for the PC

### LOCOMOTIVE POWER 56

A concise history of the driving force for the PCW software train

## REGULARS

### NEWS 2

### COMMENT 8

### VOUCHERS 22

Save £10 with Express vouchers!

### BUYER'S GUIDE: WORD PROCESSORS 23

The best head-to-head

### READERS' CLASSIFIED ADS 34

Hundreds of second-hand bargains

### EXPRESS SALES 40

The place to shop for the best for less

### JOBS 45

Need a new job? Look no further...

### TECH TIPS 54

Reliable advice from the Uncle himself

### LETTERS 62

The Hyde Park Corner of the computing world

## YOUR MACHINE

### PC compatibles 10

### Atari ST 12

### Commodore Amiga 13

### Sinclair Spectrum 14

### MSX 14

### Amstrad PCW 14

### BBC 15

### Amstrad CPC 15

### Commodore 64 18

### Sinclair QL 18

### Atari XE 18

### Acorn Archimedes 18

## Virgin cracks down on 'unofficial' machines

# EURO MEGADRIIVE BLOW TO FAR EASTERN IMPORTS

Buyers of Sega's 16-bit Megadrive games machine have been warned not to buy the console before its official launch in the autumn.

UK distributor Virgin/Mastertronic says the version which will be launched later this year will not be compatible with that sold in the Far East. In effect, anyone who buys a Megadrive from an importer will find that it will not run European standard cartridges.

When the Euro-Megadrive arrives it will be supported by at least twenty games, with more to follow.

Virgin is hoping to scare off anyone contemplating buying a Megadrive from 'grey importers'. These companies have been flying in Megadrives from the Far East for a year now, and have found a relatively lucrative marketplace.

Virgin will feel that profits are being snatched away by companies which have spotted the huge demand for the machine.

However, if Virgin does bring in a European machine it will effectively split the market between those owners supported by Virgin and those who will have to rely on unofficial software imports.

Virgin has not been backward in making this announcement. The firm is pitching it as a strike at grey importers. A spokesperson offered: "All grey imports



• Megadrive: the gloves are off

which have filtered into the European market via certain distributors have been modified without Sega's authorisation in the Far East or Europe and therefore have not been checked for safety or quality... and are not guaranteed.

"We advise customers not to buy these products. People who have already bought grey imports have been purchasing over-priced software which will become increasingly difficult to source.

Buyers of the official Megadrive can look forward to a large, exciting range which will include software commissioned only for the European market."

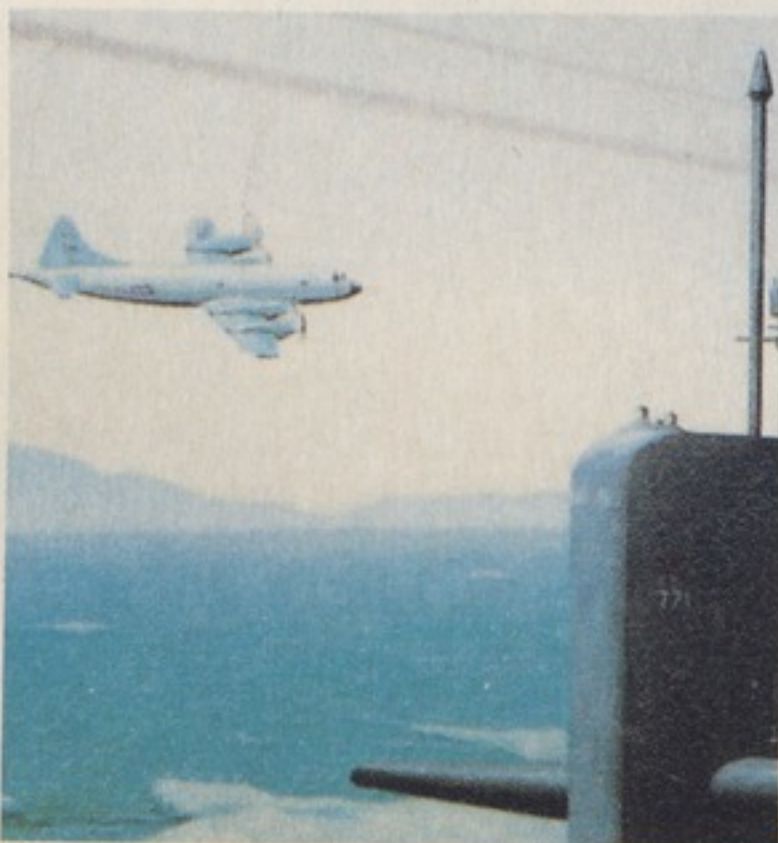
Attempts to crack down on importers are rarely a great success due to the adaptive nature of many of these companies. Anyone who does not want to wait until the official launch to buy a 16-bit Sega will, in all probability, experience no difficulty in finding a machine.

## October revolution

A re-make of Grand Slam's hit game *The Hunt for Red October* is to be launched later this year.

The entirely new game will coincide with the release of the movie starring Sean Connery. Grand Slam says the film is sufficiently different from the book to warrant a re-release. While the original of two years ago was based on strategy, *October II* will feature an action-based slant.

*The Hunt for Red October* follows the adventures of a Soviet submarine escaping from the USSR and heading for US waters. It has to avoid aggressive NATO and Warsaw Pact vessels. ■



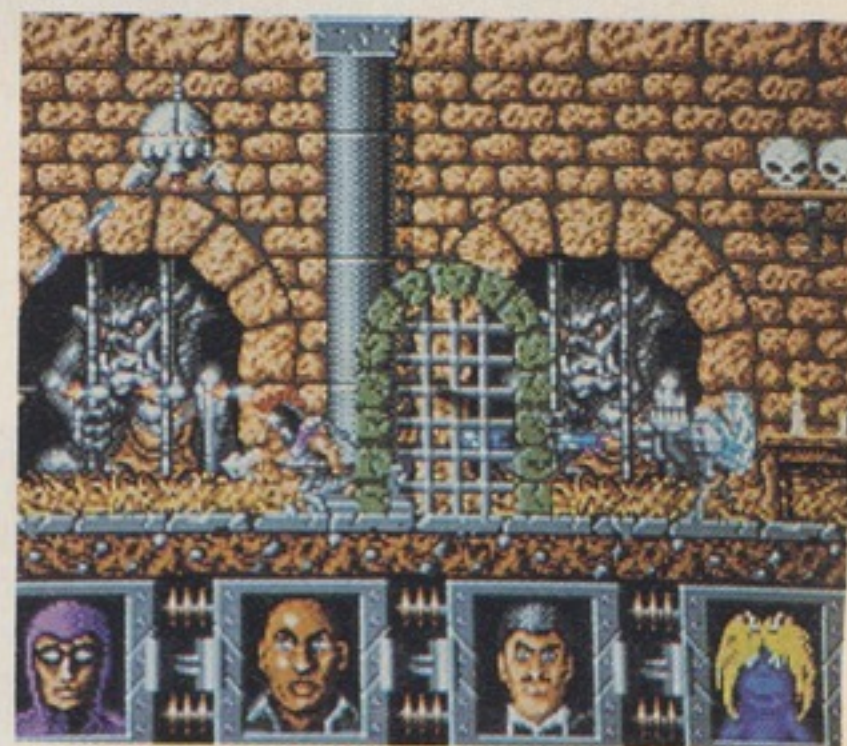
• THFRO: It's back

## Flash of inspiration

Saturday morning television watchers will already be familiar with the Defenders of the Earth - now they're coming to computers.

The four Defenders, culled from the magic age of comics, are pitted against his unspeakable nastiness Ming the Merciless. In the game from Enigma Variations you have to help Flash Gordon, Mandrake, Lothar and The Phantom get through all manner of tricky situations.

It's an arcade-style blast-'em-up with lots of graphics and loud noises. Out in March on major formats. ■



• Defenders: TV favourite

## Amstrad goes East

Amstrad is contemplating setting up a manufacturing base in Eastern Europe.

The company, which is at the forefront of establishing links with this emerging market, is looking at siting such a plant in East Germany.

Over the past two years Amstrad has switched its

factory commitments from the Far East to the United Kingdom. At present it uses freelance assembling plants in Belfast and Edinburgh. A factory in Hong Kong was closed down last year.

"We don't actually have a manufacturing plant, we tend to use other people,"

offered a spokesman. "But we wouldn't be averse to setting up in East Germany provided they can keep up supplies and high quality."

Amstrad is already selling low-cost PCs to Eastern Bloc countries, where its brand name is one of the most prominent from the West. ■



Research suggests a link between display units and power lines

# COMPUTER MONITORS IN RADIATION SHOCK

**Radiation emitted by computer monitors and other electrical appliances is being linked with disorders as disparate as miscarriages, leukaemia and cot deaths.**

In the February issue of *Electronics World & Wireless World*, scientists and writers have issued urgent calls for further research into the effects of electromagnetic fields already linked with cancers and suicides among people living near electric power lines.

More than 20 pages of articles in the magazine draw together details from many dozens of scientific investigations into radiation emitted from overhead lines, underground cables and a variety of electrical equipment including computer monitors.

All of these give off exactly the same forces, which the magazine says may be highly dangerous to those exposed for long periods.

## Don't panic

The implications of the research collected together by *Electronics World* are serious, perhaps even frightening, but they are no cause for sudden panic.

No-one is suggesting that computer users consign their machines to a dustbin and rush round to the nearest hospital to find out if their brain-cell membranes are still intact.

However, in the light of doubts expressed by scientists about the possible effects of electromagnetic fields, it is certainly worth taking a few simple precautions if you are someone who makes repeated or prolonged use of their computer.

- Don't sit too close to the screen. The strength of the EMFs is higher the closer to the machine you are. Try to sit around one metre away from your monitor where the fields are much weaker – it's probably somewhat kinder to your eyes as well.
- If spending long periods at the back of a computer, stay at least as far clear. The EMFs generated by monitors are generally stronger at the back, sides and top of the machine than they are in front of the screen.
- If you work in an environment with computer monitors, try to arrange your seating so that colleagues do not have to work within one metre of the side or back of an operator's monitor.
- Turn your computer off when you are not using it – there is no point in bathing in electromagnetic fields for an hour while you read the manual for your latest software purchase.

Previous research into monitors – long suspected of being linked to miscarriages, depression and headaches – has tended to centre on ionizing radiation such as X-rays, little of which get past the glass screen on the front of the monitor, and thermal (heating) effects of non-ionizing radiation.

Investigations into the safety of VDUs have inevitably proved inconclusive in the past. But the mass of accumulated evidence that the electromagnetic fields generated by such equipment have other significant biological effects strongly suggests that research should be re-opened with these forces in mind.

Statistics imply a higher risk of miscarriage for women who use electric blankets and heated water-beds. And there are tentative indications that cot deaths may be related to the victims' proximity to immersion heaters.

All of these appliances generate the same type of electromagnetic fields as monitors – as do some electric storage heaters, under-floor and in-ceiling heating systems.

In the article, *Electronics World* details research conducted over the past 30 years into electromagnetic fields and non-ionizing radiation. In particular it examines the issue of overhead power cables and numerous findings showing that people who live close to power cables suffer higher rates of leukaemia and other cancers.

American scientists Wertheimer and Leeper, for example, have found a two-fold increase in adult leukaemia in houses close to overhead wires. Such research has prompted many US States to impose 350-foot 'right-of-way' zones around cables.

Wertheimer and Leeper also discovered an alarmingly high rate of suicides

among people who live near such wires. That rate was shown to vary in direct relation to increasing field strength.

Electronics World's editor, Frank Ogden, told *Express* that the link between power cables and VDUs is far from a tenuous one. "The electromagnetic fields emitted from overhead power cables are exactly the same as those from a normal personal computer," he said. "The rate of say, a high resolution PC is about 50Hz. The standard rate for overhead cables is precisely the same."

"The VDU gives off radiation in

tromagnetic fields in that area which can cause a build up of pathogenic effects."

Disturbingly, Ogden warns that children and unborn babies are especially susceptible to leukaemia. "It seems to have an effect on young skin tissues. Pregnant women who operate VDUs are more susceptible."

Ogden went on: "Electromagnetic radiation is only dangerous through accumulated exposure over long periods of time. People who spend hours playing games or who go into work in the morning, switch on the computer, and only

**"The electromagnetic fields emitted from overhead power cables are exactly the same as those from a normal personal computer..."**

much the same way as a television set," explained Ogden. "When cheap computers appeared in the shops from well known manufacturers they incorporated the same technology. But people generally sit at least six feet away from their television sets. That is not the case with computers."

The radiation from cathode ray tubes, created by the scanning coil which directs the electron beam at the screen, is still thought only to be harmful within a few feet of its source. Therefore, given that people don't sit up close to television sets, they will not be harmed.

But computer owners – professionals or otherwise – usually sit two or three feet from the computer screen. And often with their faces little more than a foot from the screen.

"With computers you are really sitting up close. There are substantial elec-

turn it off before they go home are at risk."

"If you have a computer, move further away from the screen. I have moved the monitor right to the back of my desk. Anyone who does this will diminish the risks associated with exposure. Other than that, buy a computer such as a laptop with an LCD screen. These are unequivocally safe."

LCD screen technology is moving fast. Major manufacturers in Japan have already produced 14-inch colour screens and, while expensive, the prices are sure to drop over the next few years.

• All the home computers featured by *Express* are already covered by Governmental guidelines concerning safety. Whether these safety factors will be revised in the light of further research into non-ionizing electromagnetic radiation remains to be seen. ■

## NON-IONIZING RADIATION

# KILLING FIELDS

## The epidemiological evidence

The threat posed by low frequency fields emerged initially because a researcher, looking for environmental factors in childhood leukaemia, observed a link between low voltage, high current power lines and disease occurrence. Cellular evidence now supports the findings but epidemiology still leads the argument. By Simon Best.

Today living systems are exposed to a level of man-made electromagnetic fields (EMFs) in all aspects of modern life to a degree never experienced before on this planet. Most of it resulting from technological advances over the past 40 years. Whether at home or at work, EM fields generated by domestic wiring, overhead high voltage lines and occupational equipment, as well as other environmental

lines, they can be criticized on a number of counts, as will be described below. Also, they are proposed only as guidelines, with decisions on new legislation left to the relevant minister; significantly, no mention of electromagnetic fields was made in the Government's recent proposed Green Bill.

Bioelectromagnetics is the study of the effects of electromagnetic fields on biological systems and an understanding of

The Americans, however, developed their guidelines, such as they were, from a model of human absorption of electromagnetic energy that took account only of the effects of heating body tissue – the so-called thermal model. In the 1950s, Professor Herman Schwan, a physicist who arrived in the US after the War and has been based at the University of Pennsylvania ever since, mainly funded by the Department of Defense, invented

leukaemia, much of which, in the face of opposition and limited funding, has been slowly carried out over the past decade.

The first well controlled Western study linking power line fields and childhood leukaemia was reported by University of Chicago researchers Drs Nancy Wertheimer and Ed Leeper in 1979, from a case control study of 344 children aged 15 and under in the Denver area. Using a wire coding and configuration assessment of the high current electric cables near the children's homes, to indicate 60Hz magnetic field exposure, they found a statistically significant increase in childhood cancer in the exposed children, a relationship that increased with proximity.

In the UK in the same year an Altringham GP, Dr Stephen Perry, collaborated with three US researchers in New York to study suicide in the Shropshire/Staffordshire area. He measured the residential magnetic field strength outside the front door of homes and found significantly higher fields (0.1µT or more) at those of suicides as opposed to controls (less than 0.1µT); the results were published in 1981. A significant trend in risk of suicide was shown with increasing field strength.

A year later Tommensen, in Sweden, reported a two-fold increase in the incidence of childhood cancers in homes within 150m of visible 200kV power

Wertheimer and Leeper observed





## What you see is what you project

Visitors to business-oriented computer shows will be familiar with large colour projections of computer displays which enable onlookers to see how a program works.

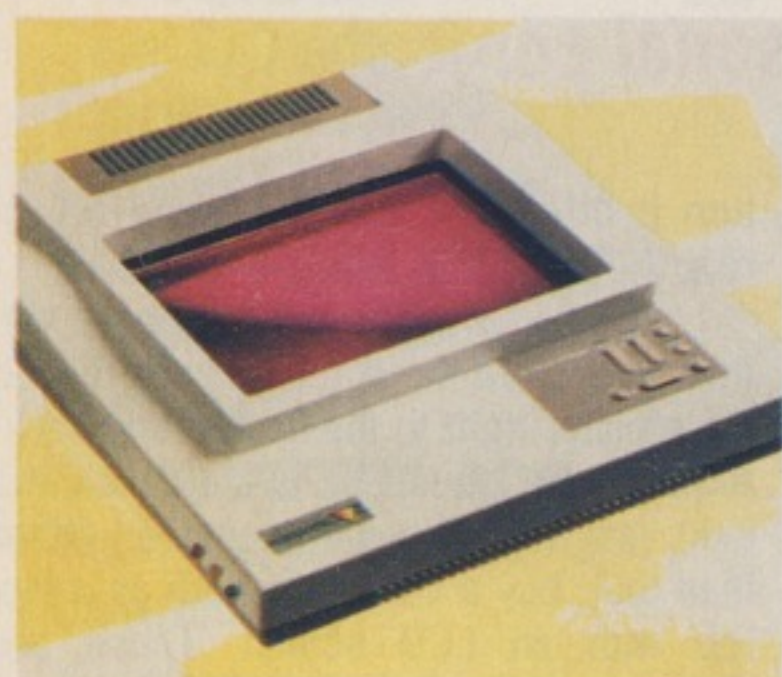
Such trickery is based on heavyweight colour data projectors costing anything from £9,000. That is, until now.

Glasgow-based CRT Displays has launched the first 'true' colour projection panel which is small, portable and costs half the price of the conventional hardware. At £4,500 it's not necessarily the essential purchase for home buyers, but for those interested in software training and demonstrations it could prove more than useful.

The 480C PC Viewer is simply placed on a standard overhead projector, the computer then displays information directly onto a wall or screen - in full colour. The 640 x 480 resolution will support any IBM or Apple-based monitor standard.

"It wasn't just the price that was a problem but the level of portability, which is paramount with this kind of product," offered CRT's Colin Maclean. "I think we're on to a winner."

He predicted that the price of portable colour projection panels will drop over the next few years. Black and white models currently sell for up to £2,500. More on 041-221 0044. ■



• PC Viewer: off the wall

# SAM'S DRIVE ON THE SCENE



• Sam drive: The 8-bits fight back

Miles Gordon Technology has finally launched its disk-based sub-system for the new Sam Coupé, allowing users to dispense with potentially frustrating tape loaders.

The ultra-thin 3.5-inch drive simply slots into the relevant port at the front of the Coupé. It has been developed by Citizen and incorporates technology based on wrist-watches.

MGT says the disk drive will put the Coupé way ahead of 8-bit rivals. The firm has wisely chosen what is fast becoming the standard drive size.

It is hoped that software publishers will find it worthwhile to write games and serious software for the fledgling machine's disk system.

At present, owners are limited to delving into their collection of ageing Spectrum games - frustrating to MGT, which considers the Coupé's potential to be almost on a par with that of the ST and Amiga.

The disk drive costs £89.95 including VAT. It comes with a full disk operating system (which is not included in the machine itself.) More on 0792 791100. ■

## Acorn comp for the imaginative

Primary and secondary schools are being offered the chance to win a state-of-the-art interactive multimedia CD-ROM Archimedes.

Entrants are being invited to submit an original idea for a CD-ROM application in less than 50 words. It can incorporate text, graphics, audio and even animation snippets. Acorn and Next, which combined to develop the CD-ROM Archie, say it will give students the chance to experiment fully with CD-ROM. There is plenty of scope for imagination, say the organisers.

Schools are required to submit their ideas on a floppy disk of any format. Next Technology will turn the winning entry around into a real CD-ROM application.

Get thinking and send your submission to Katherine Pierpoint, Acorn Computers, Fulbourn Road, Cherry Hinton, Cambridge CB1 4JN. Closing date is April 4. ■

• For a full review of the system, see page 53.

## Nixdorf nixes jobs

Troubled West German computer manufacturer Nixdorf is to shed 5,000 jobs over the next six months.

Nixdorf, one of the high fliers of the early 1980s, has recently suffered heavy financial losses brought on largely because of a market shift toward low-cost power PCs.

A majority stake in the company was recently taken by electronics group Siemens. Nixdorf, which specialises in larger computers, says it knew the takeover would mean a streamlining of the company.

Siemens says it has every intention of turning Nixdorf's fortunes around. ■

## ISRAELI CONFLICT GAME DUCKS CONTROVERSY

A potentially controversial game is to be launched which focuses on the troubles in the Middle East.

Conflict from Virgin/Mastertronic puts the player in the role of the Israeli Prime Minister. In the game his job is to de-stabilise neighbouring governments.

Not surprisingly, publisher Virgin/Mastertronic is keen to play down any controversy over such a game. "It's not designed for zealous Zionists, it's just like a smaller version of *Balance of Power*. You're not rewarded for being overly violent," offered an anxious spokesman.

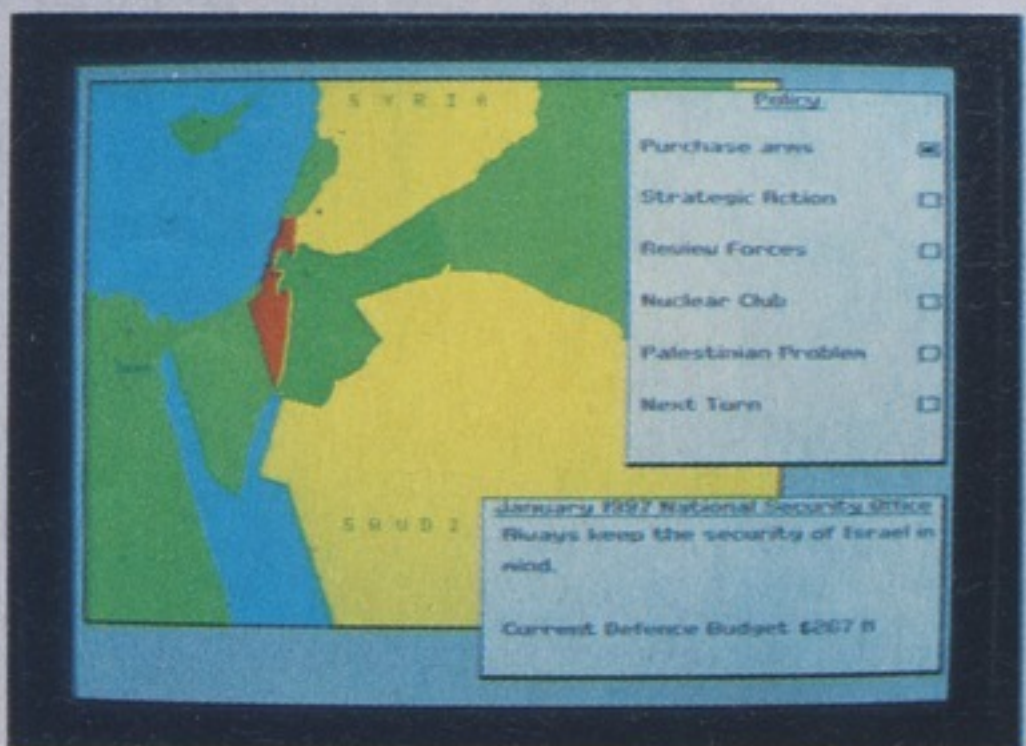
Virgin/Mastertronic points out that *Conflict* is "not a game with goodies and bad-dies - there can be no right

or wrong side in any war." Nevertheless, players are not offered a choice of country.

Apparently, the programmers were looking for a strategy game which centred on a real situation. They had considered South Africa

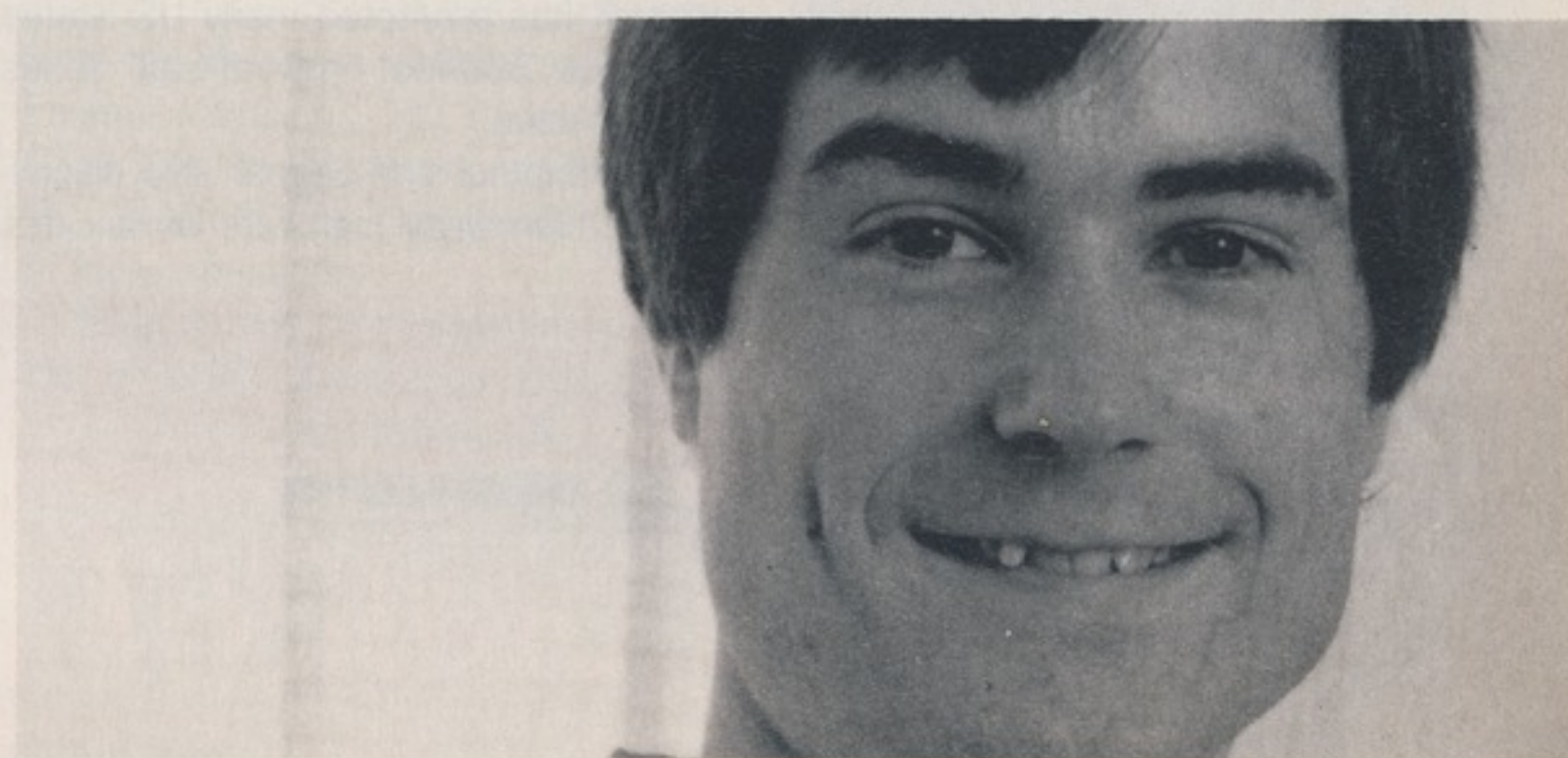
and Middle America but discarded them on the grounds that "nobody would buy those".

Curiously, the company also has plans for a game based on "the British secret police". *Conflict* costs £4.99 for the PC, Amiga and ST.



• Conflict: political

## Braben new world...



• Conqueror: Braben help

Fans of David Braben's work will be pleased to learn that his 3D routines are being used in a new game.

*Conqueror* from Rainbow Arts puts the player in charge of a 16-strong tank squadron based in western Europe. Rainbow Arts had commissioned Braben to write the 3D graphics routines because of his impressive work on hits such as

*Virus* and *Elite*. *Conqueror*'s graphics are based largely on the space game *Virus* and the similarity will not go unnoticed.

Braben is said to be using an improved version of this routine in his long awaited *Elite II* - out some time this century.

*Conqueror* is launched this month on the ST, Amiga and PC. ■



# COMPUTER CRIME: THE SYSTEM STRIKES BACK

The full weight of the American legal system was last week threatening to fall on computer hacker Robert T Morris jnr – the first person to be convicted under the Computer Misuse Act of 1986.

Morris, an intelligent but shy 25-year old was found guilty by a US Federal jury of Computer Tampering in November 1988. He had inserted a WORM program into the Internet computer system – a network of university computers with

special gateways to the massive military computer system.

His program had buried itself in the network and had tunneled through thousands of computers, causing chaos. The estimated damage to equipment and the bill for loss of on-line time runs into millions of dollars.

Morris had not been sentenced at the time of going to press, but the maximum penalty would be five years in jail plus a \$250,000 fine.

However, there is some sympathy for him following a well-argued defence, which claimed that Morris had simply been experimenting.

The former Cornell University graduate student had been fascinated by the prospect of a WORM on such a large network, but had become frightened when the program spread so quickly.

The prosecution has stated from the outset that it will not be seeking the maximum penalty. ■

## Airborne AIDS in Oz

The so-called 'AIDS virus' which struck British corporate PCs before Christmas must have mutated on its way to the antipodes – if a recent Australian snippet from Newsbytes is to be believed.

According to a story written by Paul Zucker and published by the US computer news service: "Some unconfirmed reports state that the virus is so powerful that the disk need not even be taken out of the mailing envelope to infect a computer."

Zucker goes on to cite Professor Hillakic of the AIDS Research School in Eastwick as stating: "Our network froze as the mailman walked in the door with the parcel. We should have used some sort of protection."

Is this a short satire on HIV hysteria? ■

## Amiga 3000: sneak preview

The so-called 'Amiga 3000' will be given its European premier to a few selected attendees in Paris next week.

Invitations have been sent out by Commodore to close friends and important software developers for a sneak preview of the machine.

The relatively low-cost 68030 workstation should be shown to the public for the first time in the spring (Express 54). The name of the machine and specific technical details, however, remain shrouded in mystery. ■



• Amiga: workstation version

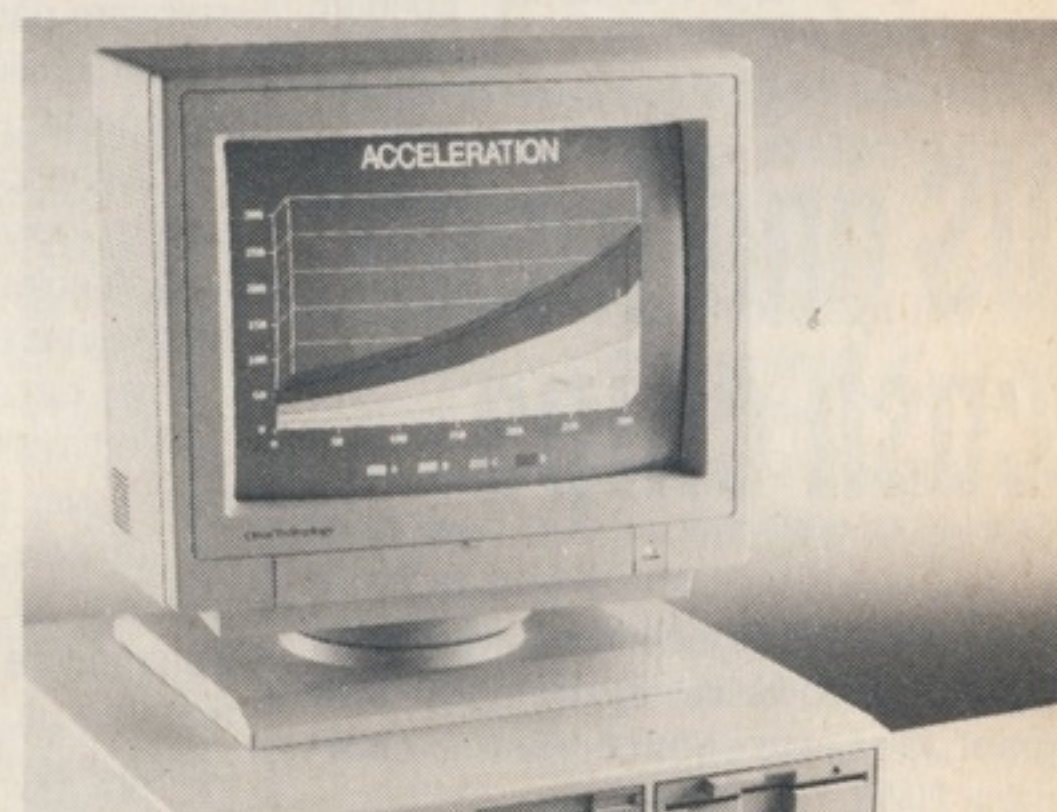
## Opus steps in with fast 386

British computer manufacturer Opus has launched a 33Mhz 386 PC.

The new PC7 386/33 will replace the old PC7 at the top of Opus' range of IBM compatibles. Buyers will be offered a 60Mb or 110Mb hard disk option.

Power PC buyers will have to fork out £2,499 for a mono version, with prices rising to £2,999 for a VGA colour machine.

The new PC7 has a zero wait state, 1.1 interleaving and selectable disk cache. It has six internal drive bays, two serial ports, one parallel port, a



• Opus: top end

socket for any extra 80387 co-processors and eight expansion slots.

A basic memory of 1Mb is expandable to 16Mb on the motherboard. ■

## Video action

Still can't decide what games console to buy? There's a new video that has just been launched that might help you make up your mind.

Featuring an hour of comparison and contrast of the big console formats, *The Games Console Video Guide* from Hotshot Entertainments is described as "a complete working guide" to the Sega, the Nintendo, the PC Engine and even the Konix machines.

There's an outline of the internal workings of a console and a run-down of the best peripherals. The video is available for the cost of £9.99. For more details, phone 0206 751217. ■

## Cheap games for 16-bit

Artronic – formerly referred to as the Cascade company – is to launch a series of low-cost games for the ST and Amiga.

As yet the firm has not given the new 16-bit budget label a name, but it has announced that games will include new titles as well as re-releases of previously popular titles.

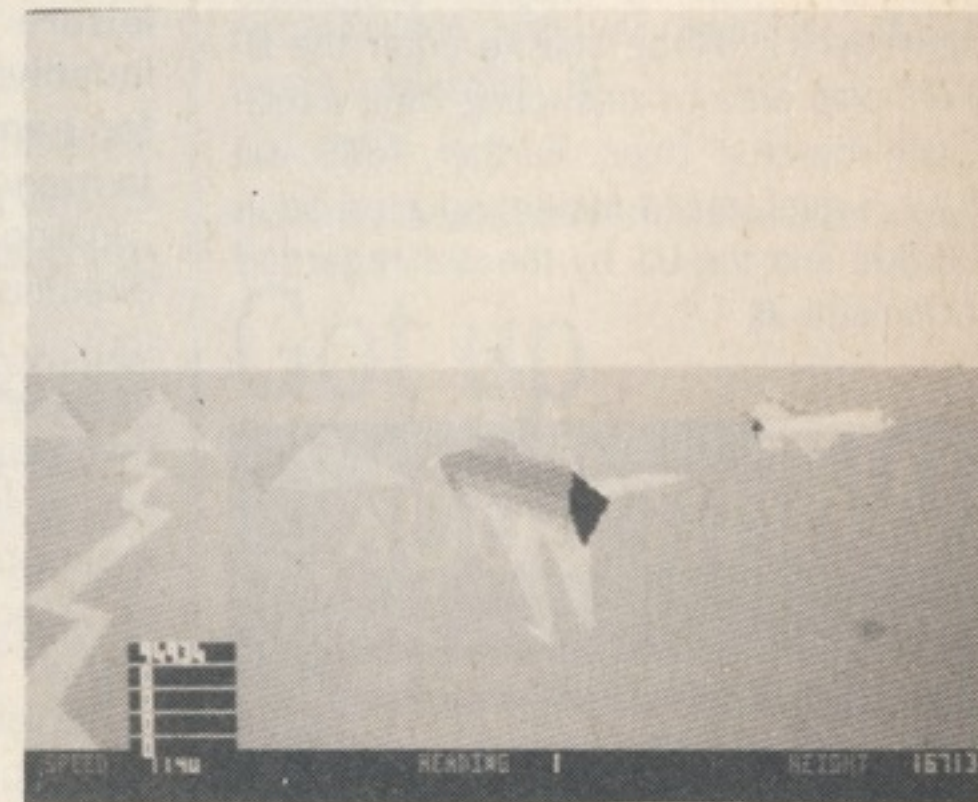
All of the games will, however, be offered to the public at the outstandingly reasonable cost of £4.99. ■

## Pilots choose the Amiga

The Civil Aviation Authority is to train new pilots with flight simulations running on Amiga 2000 machines.

A total of 24 Amigas are to be installed, all of which utilise touch screen technology developed by a company called ForeFront.

It is not yet known what software the pilots will be using, although one possibility is Microsoft's *Falcon* which has already proved to be popular among budding fliers. ■



• Falcon: to be used for the real thing

## PSION IN DEEP WATER

Biologists are using portable computers to aid in the fight against pollution.

Concerned scientists at the National Rivers Authority have invested in a batch of Psion LZ64 machines to gather data on numbers and types of animal life in some British rivers.

With the machines, they can calculate the levels of pollution in urban areas and contrast findings to water quality figures gleaned from the countryside.

The biologists say an Organiser is ideal for this sometimes messy work because of its size and robust nature. ■

## Computer design

The Design Council has turned its eyes towards computers for its annual awards.

Four of the 17 winners were computer based products, including low-cost route planner *Autoroute Plus*. The others were a pregnancy-monitoring system for the PC called *System 8000*, a DTP educational package called *Newspaper* and the pocket *Organiser, Agenda*.

The Design Council was set up to promote British standards of design. ■



## Hit the road, Sam

If you are heartily sick of reading about the Sam Coupé and if you fancy a chance to see the beast for yourself, then watch out for the MGT Roadshow coming your way.

Through late February and early March the company will be travelling through Scotland and Wales armed with all the latest gadgetry for the Coupé. Members of the public are invited to eight hotels all during the time which spans the dinner hours, from 5pm to 8pm. ■

Those Coupé dates:

February 26	Albany Hotel Glasgow
February 27	Post House Hotel Newcastle
February 28	Post House Hotel Manchester
March 1	Post House Hotel Leeds
March 5	Post House Hotel Bristol
March 6	Dolphin Hotel Southampton
March 7	Post House Hotel Coventry
March 8	Russell Hotel London

## US and Japan cash chips

US chip manufacturer Intel has signed a surprise agreement with giant Japanese semiconductor company NMB.

Rivalry between US and Japanese industry as regards chip supremacy has been bitter, but the Japanese currently hold an 80 per cent share of the world-wide chip market. An attempt to combat this Japanese lead-share by forming an amalgamation of US chip manufacturers met with a cool response from computer makers last month.

Intel has dropped any nationalistic intentions for a more pragmatic approach. It will be able to enter the D-RAM chip area by marketing NMB's relatively low-cost chips. Further, NMB will have a guaranteed market spurred on in Europe and the US by the well-regarded Intel name. ■

## Worm book

A new book that details research into computer viruses and WORMs has just been released.

Aimed primarily at computer system managers, *The Computer Virus Handbook* outlines all known viruses, how to avoid them and how to combat them. There are also reviews of 20 leading virus-busting packages and first hand accounts from people who have suffered attacks.

Publisher Elsevier says the book does not take an apocalyptic approach to the virus problem, but a pragmatic one. It is a 375-page hard back and it costs a hefty £85. More details on 0865 512242. ■

## Low-cost deal signals Commodore PC push

# BEGINNERS OPTION FOR COMMODORE PC BUYERS

A new low-cost PC package deal is soon to be offered to first-time buyers by Commodore.

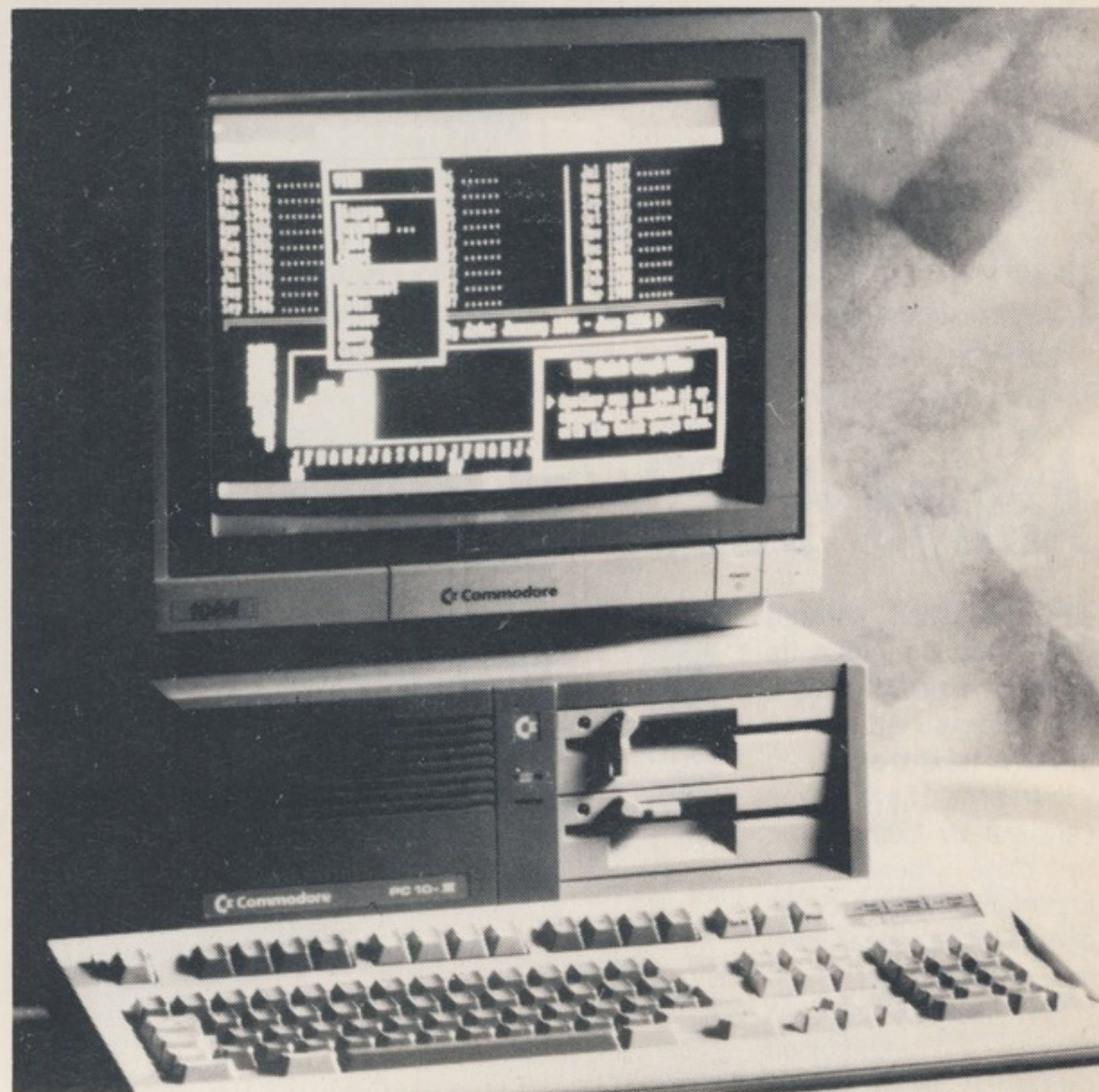
The firm, which has been trying to crack the PC market for years, says it has finally got it right with a £550 Starter Pack. Commodore is hoping to woo those who have traditionally been attracted to the Amstrad name and the low cost of its machines.

Commodore will pump some £3 million into an advertising campaign covering television, newspapers and poster sites.

Further, the bundle will feature a single drive PCXT along with a mono monitor, a suite of educational and simple business software packages and a video featuring TV personality Tim Brooke-Taylor explaining how to use the PC.

A higher-priced option is on offer to buyers looking for a colour monitor version. A colour 286 PC30 will be available for the impressive cost of £1,399.

It has become something of a tradition for Commodore to announce its intention to win over the huge PC market – a number of new initiatives have been implemented in the past three years. Commodore is pointing out, however, that this is the first time a beginners' option has been put together alongside heavy advertising commitments. ■



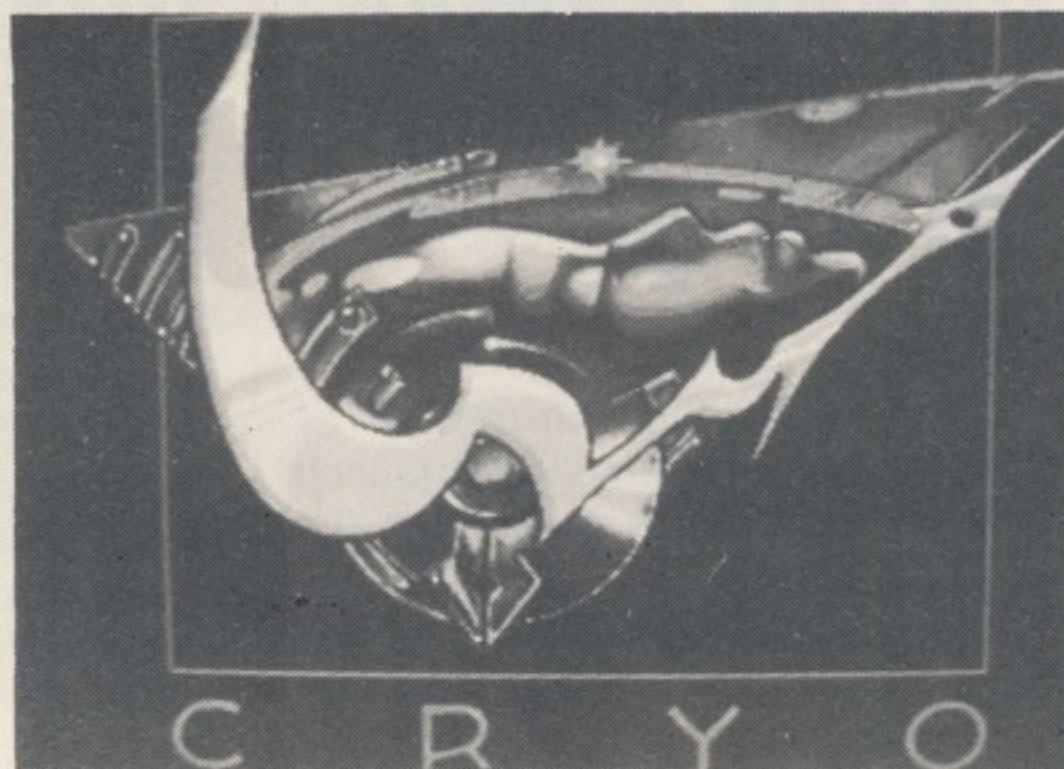
• Commodore PCXT: beginners' kit

## Cherchez la femme

Virgin Loisirs, the French arm of the well-known music and leisure group, has launched a new label for games from across *la manche*.

Philippe Ulrich, Directeur de Production for Virgin Loisirs, describes Cryo as "a communication tool whose function is to promote products developed in France for the world market".

The label – which has a logo representing a young woman asleep in a cryogenic container – "intends to open the way to the next generation of software designers: graphists, musicians, writers, programmers, directors, sound engineers and designers of special effects. They will create expanding horizons for our imagination in tomorrow's fascinating technology world".



• The Cryo logo, designed on an Amiga by Didier Bouchon and Jocelyn Valais.

Purple Saturn Day's Didier Bouchon and Remi Herbulot are among gallic gaming gurus whose cyberspeak biographies are featured in early Cryo publicity material.

Virgin Loisirs is the French distributor of games on the Virgin Mastertronic labels, and in 1988 VL signed an agree-

ment with Sega to distribute consoles and associated software through a large network of 'Sega Boutiques'.

More information about "infinite travel, magic, beauty, technology, adventure and mystery" may be had from Virgin Loisirs. Phone the good people in Paris on 010-33-1 42 78 98 99. ■

## SHOOT FROM THE LIP

"Computers are the antithesis of children. They're quiet, they're clean, they don't answer back, they remember what you tell them, and respond to instructions when you are fed up with them." Arnold Evans in the *Times Educational Supplement*.

"Boys are more easily hood-winked than girls. Boys can be persuaded that computers are really fabulous toys. Girls say: 'But all you can do with a computer game is go up and down, side to side or from corner to corner. All computer games are really the same'."

Reading based teacher John Caunter's theory on the unpopularity of computer games among females.

"I know people will say they've heard it all before..."

Commodore UK boss Steve Franklin on his firm's latest PC initiative. Naturally, we've heard it all before. (CTW).



## Back-up bill planned for crucial computers

Computer systems which are deemed to be of prime importance to the nation are to be protected by a new 'Disaster Bill'.

Anti-hacking campaigner Emma Nicholson plans to put forward a new initiative which would make users responsible for their systems. The bill would only affect large companies and institutions.

The bill, as part of a larger overall proposal, could make computer back-up a legal necessity for certain systems, and it will

cover computer maintenance, back-up, upgrade paths and support.

Nicholson says she wants to make sure computers linked to banks, hospitals, the military and power stations are properly protected.

Her bill will be put before the House after Michael Colvin's Computer Misuse Bill is passed. Colvin's bill - which Nicholson supports - is aimed at hackers and virus writers, and it should go through in the summer.



## Dedicated communications computer arrives

# COMMS GOES PORTABLE WITH TINY MACHINE

A tiny stand-alone communications device being developed by Viewdata specialist BTV Electronic looks set to revolutionise on-line information exchange.

The Argus Communicator is a complete E-Mail and Viewdata terminal that can be linked to PC monitors, allowing users to transmit and receive messages at speeds of up to 19,200 Baud. The device measures 240 x 160 x 40mm.

Part of the speed of Argus is due to its intelligent task management via a built-in procedural language based on a variant of the well-known BBC Basic, which is compiled at run-time.

Cheltenham-based BTV bills the Argus

as a 'desktop comms box' equipped to outperform Prestel systems at a fraction of the price. There are three models available with battery backed static RAM amounting to 32K, 128K and 256K respectively. Prices start at £630.

The top-end configuration is a file server with 20Mb hard disk able to handle a network of up to 254 slaves, each of which is fully independent. The server and interfaces are being offered at £3,000, with additional lines available for around £1,000 each.

Already, Local Education Authorities in Shropshire and GPs in Luton are using the system - the latter encouraged by the Government's 50 per cent subsidy

on PC purchases. Schools are using the network at a quarter of the annual fee of the Prestel service they used previously, while doctors are logging on as a means of downloading lab reports and information from central hospital computers.

Ironically - despite the advanced viewdata technologies employed - the units are being bought for the simple reason that they feature auto-message detect - flashing a light if they have received a message from an on-line source.

This ease-of-use, coupled with the fact that the units are virtually idiot-proof should ensure widespread sales among companies and institutions using E-Mail and information services. ■

## More spice to Planner

Sage has just announced a new release of its PC Planner spreadsheet program.

Release 3 provides users with the ability to link files in 3D as opposed to ordinary two-dimensional sheet rows and columns. It will now be possible to work with several sheets at once.

So, an interlocking series of layouts can be created to produce a complex financial model of, say, every department in a company.

PC Planner 3 is compatible with Lotus 1-2-3 and includes new graphics capabilities as well. It is available for the sumptuous sum of £199. ■

## Mouse to mouse resuscitation

Tired of all those horrid sticky bits clogging up your mouse? Then you can turn to Romulus Data Systems.

The company has exploded into the computer business with a revolutionary new idea guaranteed to knock your socks off. It's the all-in-one mouse repair service.

For £5.95 Romulus will take your little friend apart, give it a nice clean up and send it back as good as new.

Pretty good, eh? Unfortunately the offer is only open to ST owners. Romulus is at 44, Ayletts, Basildon, Essex, SS14 1UJ. ■

## C5 alive

Fans of Sir Clive Sinclair may be surprised to learn that he is contemplating the launch of a follow-up to the C5.

The C15 will be faster than its doomed predecessor and will have a greater range - 20 miles. ■

## Got up down-under

The New South Wales police force in Australia was put in an awkward position recently by its own traffic control computer.

In an attempt to reduce the number of outstanding parking fines, the NSW police had established a system whereby your car would be automatically de-registered by the computer for failure to pay up.

The problem started when a top-notch police officer did not pay a parking fine on the unmarked police car that he had been driving - the car being registered to the NSW police department of course.

In turn, the computer de-registered all the cars belonging to the police department and thus all the officers drove illegally registered cars without knowing it. ■

## IN AT THE CHEAP END



• Elonex XT: low cost

The exceptionally busy PC manufacturer Elonex has launched yet another PC - this time it offers an entry level 'slimline' XT model.

The 88M runs a 10MHz processor and features a built-in Hercules-compatible graphics controller. It sports one parallel and two serial ports and can handle

two floppy drives at once. There are also three expansion slots.

The machine costs £645 and comes with 640K of RAM with a 720K 3.5-inch disk drive and mono monitor. A VGA colour system is available for an extra £300. For more details phone Elonex in London at 01-965 3225. ■

## Bargain Hunters Paradise

Don't forget - this weekend the New Horticultural Hall in London opens its doors for the first All Formats Computer Fare.

Billed as a 'bargain hunter's paradise' the show is run along the same lines as the old ZX Microfair (Express 62). Buyers can expect to see dozens of hardware and software dealers off-loading stock at knock-down prices. There are going to be deals, deals, deals.

Organiser Bruce Everiss says he is absolutely certain that the show will be a success because of the number of companies looking to sell off their old Christmas stocks.

But he warns visitors not to expect the glittering razzmatazz of extravaganzas such as were in evidence at the PC show. This event is strictly functional.

The exhibitors lined up include familiar names such as Software Express, Westoning, Dowling Computers EEC and Data Club UK. The entrance fee is £3 and the fare starts at 10am this Saturday (February 10th). ■



Some readers may be wondering exactly why we have chosen to lead this issue of *Express* on the question of the safety of working (and playing) with computers.

Surely, you may be saying to yourself, this is all old hat. Were these fears not firmly knocked on the head back in the early 1980s? Haven't scientists assured us that there are no fearsome particle beams shooting out of the front of the machine, nor deadly gushings of X-rays?

Well, yes and no. Assured, yes, but should we feel reassured? The sheer volume of material collected together by *Electronics World* and *Wireless World* for its February issue represents a very good reason for us all to pause for thought.

What *Electronics World* is saying is frequently difficult for the lay person to follow. But the gist of the collated research, as we understand it, is that there are numerous sets of findings which strongly suggest that electromagnetic fields of a certain type produce effects in human beings which have not been adequately researched by the people we rely on to tell us whether the things we deal with are safe or not.

## AIR OF CONSPIRACY?

Even worse, the magazine tentatively points the finger and says that there are those who do not want this information to come to light.

For the moment, let us allow the conspiracy theories to rest, and examine just what the implications are of the many and varied papers *Electronics World* has gathered together. Here is just some of the information involved:

- Evidence gathered on both sides of the Atlantic points to higher incidences of various ills among people who live in close proximity to overhead power lines – cancers, including leukaemia, depression and suicide are all cited.
- Similar effects may also be attributable to living near underground power lines.
- High incidences of heart disease and depression have been recorded in high-rise block residents living close to rising power cables in those buildings, and the depression rate higher still among those whose flats have under-floor or storage electric heating.
- Statistics suggest a higher risk of miscarriage for pregnant women living in homes with ceiling-cable heating, using electric blankets, using heated water beds or working with computer monitors of the standard 'cathode ray tube' type.

# COMMENT

Why the question of whether it is safe to sit in front of your computer monitor is still a long way from being a dead one.

• Tentative evidence has been found linking 'inexplicable' cot deaths to the baby's proximity to domestic immersion heaters, although there seems to be no money available to expand research in this area.

In all probability, none of the research cited is in itself anything like conclusive. But taken together, these various papers paint a highly disturbing picture.

What power lines, cable and storage heating systems, immersion heaters, electric blankets, heated water beds and cathode ray monitors have in common is the electromagnetic fields associated with them, produced by 50-60Hz supplies.

There is nothing tremendously mysterious about these fields in the sense that they are more or less the same things that make iron filings form pretty patterns on a sheet of paper with a magnet under it.

What is startling is the growing body of evidence that these EMFs, previously considered harmless and thought to do very little other than heat up our bodies by the teensiest amount, now begin to look as if they produce a number of other biophysical changes. Effects which already look more than possible include immune system damage and changes to brain-cell membranes.

## BRAIN TUMOURS

Computers are but a small aspect of this subject, but we concentrate on them for the obvious reason that we are a computer magazine and that many of our readers spend a lot of their time – either at work or at leisure – sitting in front of their monitors.

If research from around the world is strongly suggesting that the same elec-

tromagnetic fields generated by our computers are associated with leukaemia, brain tumours, miscarriages, foetal abnormalities, depression, suicide, immune system damage and goodness knows what else, then we all have the right to wonder what the people who collect and spend our taxes are doing to check this out.

Doubtless the official response will be that these things have been around for years, and surely we would have noticed long before now that electromagnetic fields were dangerous. The argument is specious at best. Tobacco had been around for centuries before being officially accepted as a health risk; butter for centuries more, and yet we are now told to be careful about our cholesterol intake.

This is not a 'computer manufacturers are killing you' editorial leader, nor one which aims to suggest that employers are cynically exposing their workers to unnecessary risk. We do not point the accusing finger at Commodore, Amstrad or IBM; we do not aim to expose the Confederation of British Industry as satanic despots.

Everyone is in approximately the same boat when it comes to EMFs. Even the top scientists are still effectively groping in the dark. What is needed is concerted action not just by the British Government but by those of all developed countries to research the possible effects of these fields as a matter of urgency. We are, after all, surrounded by them day in and day out.

As computer users in particular, we need to know either that our machines are safe to use or that their associated electromagnetic fields are a hazard to health and that something will be done to eliminate them from our work and home environments.

## ONE YEAR AGO

● **FREEBIE INCENTIVES** for Amstrad, Commodore and Atari machines were announced.

Amiga buyers could get six games and rich DTP fans could pick up a Mega ST with a special word processing bundle.

But Amstrad baffled everyone with a free monitor with every PPC portable.

● **US GOLD** received a ticking off from the Advertising Standards Authority for its grossly sexist effort publicising *Psycho Pigs* UXB.

● **IT WAS REVEALED** that Cambridge Computer was planning a PC compatible version of the Z88. are still waiting

## TWO YEARS AGO

● **THE FIRST** Amstrad PPCs arrived in the UK.

● **CODE MASTERS** announced bold plans for its charity game *The Race Against Time*. The Sport Aid game would, predicted the firm, raise £1 million for Sport Aid.

It arrived later in the year, was dogged with problems, and flopped.

● **THE WHICH** Computer? Show turned out to be a brilliant success (yes, again!).

## FIVE YEARS AGO

● **LADY SINCLAIR** was divorced from Sir Clive after 22 years of marriage. At the time she was a director of Sinclair Research.

● **BRITISH AIRWAYS** wised up to the tricks of computer fraudsters who were booking tickets all around the world by tapping into the booking computer. A new anti-hacking device was installed in the system.

EXPRESS

EDITOR • Martyn Lester  
FEATURES EDITOR • Andy Storer  
NEWS EDITOR • Colin Campbell

### CONTRIBUTORS

Rob Ainsley • Jerry Glenwright • Maff Evans  
Steve Carey • Simon Williams • Robin Alway  
Andrew Brown • Keith Neal • Edmund Blake •  
Jason Holborn • Bertram Carrot • Rod Lawton •  
John Torofex • Pete Gerrard • Mark Higham

ART EDITOR • Angela Neal  
PRODUCTION EDITOR • Stuart Anderton  
DEPUTY PRODUCTION EDITOR • Ben Feinbaum

ADVERTISEMENT MANAGER • Mark Salmon  
DEPUTY AD MANAGER • Adrian Taylor  
AD EXECUTIVES • Simon Moss • Helen Kirkhope  
ADMIN CO-ORDINATOR • James Leach  
AD PRODUCTION • Frances Wasem  
AD TYPESETTING • Terry Turner

PUBLISHER • Greg Ingham  
MANAGING DIRECTOR • Chris Anderson

© Future Publishing Ltd • 30 Monmouth St, Bath,  
BA1 2AP • Tel: 0225 442244 • Fax: 0225 446019  
Subscriptions: The Old Barn, Somerton,  
Somerset (0458) 74011  
• Printed by Redwood Web Offset, Trowbridge,  
Wilts • Distributed by Comag, West Drayton,  
Middx



# ATARI ST and AMIGA

## Sixteen Bit Superdeals from the Sixteen Bit Specialists !

**CUSTOMERS PLEASE NOTE! When comparing prices remember ours include fast delivery by courier.**

**NEW!!**

### 520 STE Power Pack

**£359.00**

*Inc. VAT and Next Day Delivery*

**NEW STE**

#### Power Pack includes:

- ★ 520 STE 512K Keyboard with Built-in 1 Megabyte disk drive and TV Modulator
- ★ 4096 Colour Palette
- ★ 8 Channel digital stereo sound
- ★ 4 Joystick Ports
- ★ Over £550 worth of games software, including OutRun, Gauntlet 2, R-Type, Space Harrier, Super HangOn and 16 more Top Games
- ★ Organiser Business Software including WORDPROCESSOR, SPREADSHEET and DATABASE.
- ★ First BASIC and First Music Utility Software
- ★ FREE JOYSTICK AND FREE MOUSE MAT WORTH £4.95
- ★ All leads, manuals PLUS MOUSE and free mains plug!

**REMEMBER!** Many ST's do not come with BASIC - ours come with ST BASIC REV D by Metacomco.

### 520STE Explorer Pack

**£279.00**

**NEW STE**

- ★ Explorer Pack Includes 520STE 512K Keyboard with built-in 1 Megabyte Disk Drive and TV Modulator
- ★ 1 FREE Game, ST Tutorial and METACOMCO Basic worth £25.00
- ★ All Leads, Manuals PLUS MOUSE and FREE Mains Plug! ★ Free mouse mat worth £4.95

### 1040STE Super Pack

**£479.00**

- ★ Includes the new 1 megabyte 1040STE keyboard plus £450 worth of software. Comprising 21 games and Organiser Business Software. Also includes Metacomco BASIC, Mouse Pad, all Leads, Manuals and Mouse.
- ★ 1040 STE keyboard without software **£439.00**

### MEGA 1 BUSINESS PACK

**£529.00**

#### Features:

- ★ Separate Keyboard and System Unit
  - ★ £385 worth of Business Software including MICROSOFT WRITE word processor (£150), SUPERBASE PERSONAL Database (£60) and VIP PROFESSIONAL Lotus 123 Spreadsheet clone (£150). Metacomco Basic (£25.00)
  - ★ Blitter chip installed for faster graphics
- Inc SM124 Mono Monitor..... £628.00*

## ACCESSORIES

Quickshot II Turbo Joystick.....£9.95	Branded Memorex 3.5" DS DD Disks
Competition Pro 5000 Joystick.....£13.95	Box of 10.....£13.95
Competition Pro with Autofire.....£14.95	Memorex Disk Box
Konix Speedking Joystick.....£11.95	For 40 3.5" Disks.....£8.95
Red Mouse Mat with Amiga logo...£5.95	Amiga 1/2 Meg Expansion.....£119.95
Plain blue Mouse Mat.....£4.95	Control Centre Atari or Amiga.....£44.95
Contriver Amiga and ST Mouse with FREE Holder and Mouse Pad £20.95	

## PRINTERS

Star LC24-10 24 pin incl. lead ST/Amiga .....	£249.00
Star LC10 including interface lead for ST/Amiga.....	£169.00
Star LC10 colour including interface lead for ST/Amiga.....	£219.00
Citizen 120D including interface lead for ST/Amiga.....	£159.00
<b>SEIKOSHA 80 COLUMN PRINTERS - AMAZING PRICES</b>	
Seikosha 9 pin NLQ including interface lead for ST/Amiga.....	£139.00
Seikosha 24 pin LQ including interface lead for ST/Amiga.....	£239.00

### AMIGA A500 BAT GAMES PACK **£399.00**

*Inc VAT and Next Day Delivery*



#### BAT Games Pack includes:

- ★ Amiga A500 512K Keyboard with Built-in 1 Megabyte disk drive.
- ★ Free TV modulator worth £24.99 allowing you to use the Amiga with a normal TV.
- ★ DELUXE PAINT II GRAPHICS PACKAGE
- ★ PHOTON PAINT II graphics package with animation worth £70.00
- ★ FREE, only-just-released BATMAN - THE MOVIE games software.
- ★ NEW ZEALAND STORY arcade games software.
- ★ F16 - INTERCEPTOR - amazing 3D flight simulator software.
- ★ A further £230 worth of Games Software, including BUGGY BOY, MERCENARY, BARBARIAN, WIZBALL & six more games.
- ★ FREE JOYSTICK, MOUSE MAT AND 10 BLANK DISKS
- ★ Amiga BASIC, Amiga EXTRAS 1.3, Workbench 1.3 PLUS the Amiga Step by Step Tutorial.
- ★ All leads, manuals PLUS MOUSE and mains plug!

### AMIGA 1 MEG BAT GAME PACK **£529.00**



#### 1 Meg Bat Games Pack includes:

- ★ Fitted 1 Megabyte Memory Expansion + Real Time Clock Card
- ★ Everything listed for the A500 Bat Game Pack
- ★ DRAGON'S LAIR 1 MEG MEGAGAME!

### AMIGA A500 CLASS OF THE 1990'S BUSINESS + EDUCATIONAL PACK **£549.00**

#### FEATURES:

- ★ Amiga A500 + TV Modulator
- ★ Midi Interface + Software
- ★ Kind Words II word processor
- ★ Page Setter DTP
- ★ Super Base Personal Database
- ★ Maxiplan 500 Spreadsheet
- ★ Amiga Logo, BBC Emulator, Deluxe Paint II
- ★ Mouse mat, 10 blank disks and disk wallet

## EXTERNAL DISK DRIVES

Atari SF314 1 Megabyte.....£139.00
Amiga A1010 1 Megabyte.....£109.00
Cumana 1 Megabyte Atari or Amiga.....£89.95
NEC 1 Megabyte Atari or Amiga.....£79.95
Atari Megafile 30 Hard Disk.....£439.00
New! Commodore A590 20 meg hard disk.....£369.00
A590 Hard Disk + Memory Upgrade installed.....Phone

## MONITORS

Commodore Amiga A1084 Stereo colour Monitor inc lead.....£249.00
Atari SC1224 Colour Monitor inc lead.....£259.00
Atari SM124 Mono Monitor including lead.....£119.00
Philips CM8833 stereo colour monitor inc. lead for ST or Amiga.....£259.00



### CREDIT CARD ORDERLINE ☎ 0908 378008 (Mon - Sat 9am - 6pm)

To order either call the orderline above with your Credit Card details OR make a cheque or P.O. payable to Digicom Computer Services and send it with your order to the address below. Callers are also most welcome at the address below

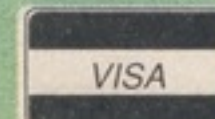
## DIGICOM

**Unit 36, Wharfside, Fenny Stratford, MILTON KEYNES MK2 2AZ**

*All prices include VAT and delivery by courier  
\*Written details on request APR 34.5% Variable*



**INSTANT CREDIT  
NOW AVAILABLE \***







## LANGUAGE MASTER

Those nice people at Software Paradise sent in a copy of *Language Master* the other day. This is an on-line dictionary and thesaurus which takes only 100K of memory and pops-up over your favourite word processor.

So what? I hear you say that most word processors contain a spell checker and thesaurus these days. Ah! I reply cockily – preparing to leave you dumbfounded – but how many dictionaries offer you definitions of the words you look up as well as offering the other parts of speech of those words?

How many of them will automatically take the word over the cursor as the subject of the look-up? And how many dictionary-cum-thesauruses can be made to pop-up over another pop-up, like *TopCopy Plus*?

There aren't a lot. In fact – go on – name one.

Indeed, *Language Master* is very useful and it does help with lightning look-ups of any of nearly 80,000 words. If the dictionary doesn't contain the target word (or if it's spelled incorrectly) it will show you a shortlist of possibilities based on phonetic as well as lexical similarities.

The American English version makes use of the Merriam-Webster concise dictionary and thesaurus and the UK one uses Collins' equivalents.

It's fun looking up words in the US version. Did you know that to 'sock away' was to make an investment or saving, and that to 'fun' was to have fun with banter and jokes? Or, did you know that 'chips' and 'crisps' are interchangeable?

"I say, Carruthers, don't quite understand your banter". Looks like Churchill was right – two nations divided by a common language.

Software Paradise can supply the UK English version of *Language Master* for £86.25, and you can make contact on 0222 887521.

## WINDOW CLEANER

I recently took part in the *PC Plus* awards for 1989. This is the first time the awards have been run, and it was interesting to see the range of views on the nominated products.

Out of it all – no, I'm not going to tell you who won what – came the impression that Microsoft Windows is going to rule the world, and sooner than Britain enters the EMS. I've already let my feelings show on the efficacy of Windows as the major graphics interface for MS-DOS, but I'm resigned to go with the flow.

GEM may have a prettier interface, DesqView may be a lot more efficient as a multi-tasker, but Microsoft has the muscle. It is for this reason alone that I've never doubted we'll all take Windows to our hearts.

There is a precise parallel, after all. In 1981 we took an old, under-powered, under-capacity personal computer from another multi-national, who presented it as a *fait accompli*. Just pray with me that Microsoft reworks the DOS Executive for Windows 3.

## ANSI, THE ANSWER

The *ANSI.SYS* driver is supplied with all MS-DOS machines to simplify the sending of control characters and graphics to the screen. Once installed, you can produce all manner of interesting effects with a minimum of programming.

The only snag is that some programs don't get on with the ANSI driver. Some code likes to handle this side of things for itself.

Anyone who has a copy of DesqView, the Quarterdeck multi-tasking operating system, should also have a copy of *DVANSI.COM*. This, as the name rightly suggests, is DesqView's own version of the ANSI driver.

As the observant will have noticed, however, the filetype is *.COM*. This gives a clue to the biggest advantage of the Quarterdeck product – you can install it at any time, not just at start-up, as is the case with *ANSI.SYS*.

This flexible installation means you can run without *ANSI.SYS* until you need it, at which time you can then bang it in without rebooting.

## KEEPING BOXES

I moved house this week-end. You know the kind of thing – a hire van and a mate to help you load and unload. All went fairly smoothly, though it took me the best part of a day to get set up again.

The one thing that was really driven home by the experience is the importance of keeping the boxes your kit arrives in.

It's not only a lot easier to stack and fit cuboid boxes into a van or car boot, it's also a lot easier on your stress factor to know the equipment inside them stands a fair chance of survival.

The only problem is where to store the empties in between moves. My vote, after some partially unfortunate experience with the matter, goes to the loft – outhouses tend to be too damp to store cardboard long term.

Simon Williams

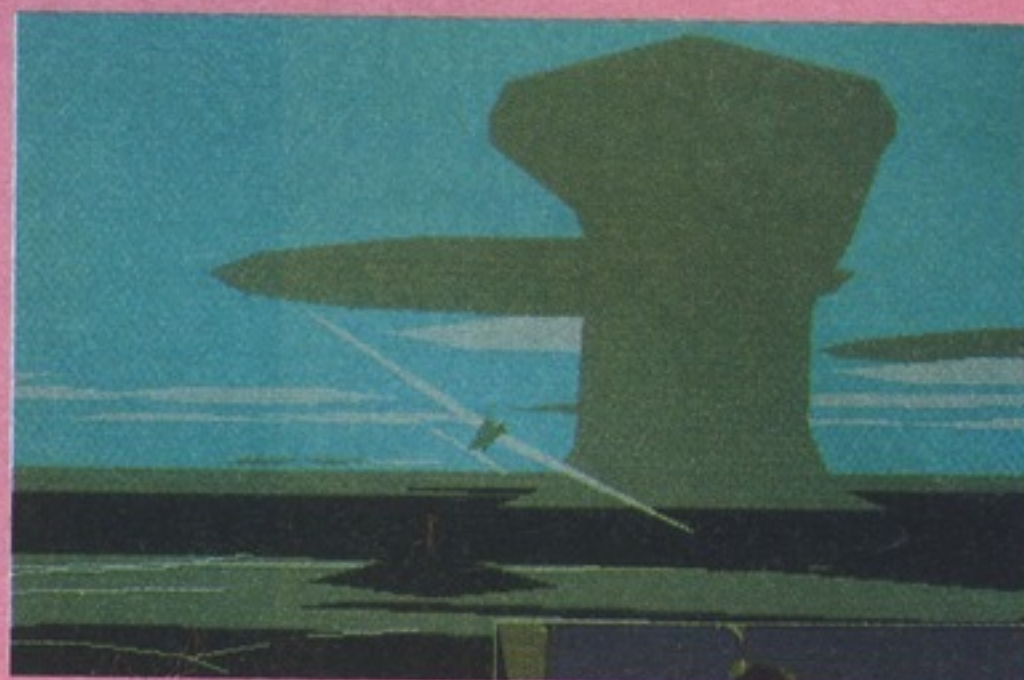
## FLIGHT SIM IV: FANATIC'S DELIGHT

There are those who like playing flight simulators because they are good at them. And then there are those who invariably bury their noses, and those of their planes, in the tarmac shortly after take-off. I definitely fall into the latter group.

Therefore, I may not be sufficiently qualified to comment, but – for the record – I find the vector graphics used in flight sims pretty dull.

The fanatics seem to get over excited about a few grey strips (the tarmac), a few blue strips (the coast around Frisco) and the odd dot (the enemy aircraft).

The dots tend to whisk out of view before



you have time to find the 'Sidewinder' key, but after they've released Russian equivalents with your name on them.

*Flight Simulator IV*, the latest version of Microsoft's first ever PC game, doesn't suffer the Sidewinder problem, and my colleague Matt Nicholson raved over it in

a recent *PC Plus* review.

Then Matt is rumoured to have taught Chuck Yeager the difficult pancake roll, so there's little doubt he knows a good flight sim.

Nonetheless, I find it difficult to get as excited about *Flight Simulation IV* as I can about *Stunt Car* or *Interphase*.

## TI's new printers

Texas Instruments, a company best known for its microchips and its dead handy programmable pocket calculators, has launched a couple of 'entry level' printers.

These aren't 'entry level' in the way, say, a Star LC10 is entry level (on sale for less than £150, in other words) but they do seem pretty full-featured.

The 830 and its wide-carriage brother the 835 both have 9-pin print heads, 3-way paper handling (bottom, rear and top) of paper up to 5-part thickness and bustle along



at a healthy-sounding 300 cps in draft mode. Near letter quality text is at a more sedate 63 cps.

Prices are £475 and £665 for the 830 and 835 respectively and TI is on 0234 223505.

## WORDS, AND PICTURES TO GO WITH WORDS

If you've invested in a DTP outfit, one thing you can never have enough of is clip art. This is the collection of small, hand-drawn images that you use to illustrate text and to add life to otherwise doudy pages.

Clip art distinguishes a desktop-published document from one done on a word processor. Indeed, if you are a dedicated computer artist, you will probably be able to create any image you might need.

For the other 99.95 per cent of us, Words and Pictures' range of over 1,300 custom-made clips is probably just the ticket ... or brochure or flyer.

Unlike much commercial



• A friendly face from Words and Pictures' clip-art

clip art, Words and Pictures' catalogue is claimed to be all of UK origin. They're certainly images I haven't seen before, but some still have an

American 'style' to them.

There's a wide range of clips on a wide range of themes from which to choose: from cartoons, to maps, to

icons. They are available in several versions, including GEM IMG, PC Paintbrush, TIFF, MAC, GEM and encapsulated PostScript.

Types of clips come together in packs, including: maps, views, graphics, headlines and borders. Thoughtfully enough, there are also sets for newsletters, for parish magazines and for advertising.

Depending on resolution, cost ranges from £19.95 to £49.95. Words and Pictures also carries out file conversions and resizing – £2.50 for 10 images – and designs custom logos. Ring it on 0295 258335 for more details.



# MEMORY UPGRADES

## ONE STOP SOURCE FOR ALL PC MEMORY UPGRADES

**Datrontech. Europe's only dedicated manufacturer and stockist for value added memory. All products carry a five year warranty and are available ex-stock. Call for volume and dealer pricing.**

### 1 COMPAQ MEMORY

	COMPAQ P/No.	PRICE (£)
<b>DESKPRO 386/33</b>		
2MB Module	115144	395
<b>DESKPRO 386/25</b>		
1MB Module	113131	185
4MB Module	113132	545
<b>DESKPRO 386/20</b>		
1MB Module	113131	185
4MB Module	113132	545
<b>DESKPRO 386/20e</b>		
1MB Module	113131	185
4MB Module	113132	545
1MB Exp/Brd	113644	195
4MB Exp/Bd	113645	598
<b>DESKPRO 386/5</b>		
1MB Module	113646	185
4MB Module	112534	545
1MB Exp/Bd	113633	195
4MB Exp/Bd	113634	598
<b>DESKPRO 386/16</b>		
1MB Kit	108071	255
4MB Kit	108072	698
1MB Exp/Bd	108069	294
2MB Exp/Bd	108069 + 108071	Call
4MB Exp/Bd	108070	1019
8MB Exp/Bd	108070 + 108072	Call
<b>PORTABLE II</b>		
1MB Kit	113012	94
<b>PORTABLE III</b>		
512KB Kit	107331	71
2MB Kit	107332	182
<b>PORTABLE 386</b>		
1MB Kit	107651	288
4MB Kit	107653	930
4MB Extra/Bd	107654	930
<b>COMPAQ SLT/286</b>		
1MB Bd	110235	278

### 2 IBM MEMORY

MOTHERBOARDS MODULES:	IBM P/No.	PRICE (£)
<b>PS/2 25</b>		
128K Kit	78X8955	34
<b>PS/2 30/286</b>		
512K Kit	30F5348	86
2MB Kit	30F5360	229
<b>PS/2 50/60</b>		
As above - fitted with IBM adaptor Board P/N 1497259		Call
<b>PS/2 50Z</b>		
2MB Module	6450604	274
512K Kit	30F5348	86
2MB Kit	30F5360	229
<b>PS/2 55SX</b>		
2MB Module	6450604	274
<b>PS/2 70 Portable</b>		
2MB Module	6450604	274
<b>PS/2 70 E61 &amp; 121</b>		
1MB Module	6450603	152
2MB Module	6450604	274
<b>PS/2 70 A21</b>		
2MB Module	6450608	286

### IBM MEMORY cont.

<b>PS/2 80/041</b>			
1MB Bd	6450375	193	(£)
<b>PS/2 80-111 &amp; 311</b>			
2MB Bd	6450379	322	(£)
<b>IBM MEMORY BOARDS (adaptor boards):</b>			
<b>PS/2 50, 60, 50Z, 55 and 70</b>			
Adaptor Bd + 2MB Memory	6450605	488	(£)
<b>IBM EXTENDED/EXPANDED MEMORY BOARDS (Orchid Boards with Standard SIMM Memory)</b>			
<b>XT/AT</b>			
512KB	315	4MB	589
1MB	285	6MB	764
2MB	399	8MB	949
<b>PS/2 50, 50Z, 60, 70 and 80</b>			
512KB	324	4MB	597
1MB	299	6MB	773
2MB	408	8MB	957

### 3 TOSHIBA MEMORY

	TOSHIBA P/No.	PRICE (£)
<b>PORTABLE T3100e</b>		
512K Card	PC9-PA8340U	148
2MB Card	PC9-PA8341U	344
<b>PORTABLE T3200</b>		
3MB Card	PC6-PA7137U	530
<b>PORTABLE T5100</b>		
2MB Card	PC7-PA8301U	344
<b>PORTABLE T5200</b>		
2MB Module	PC10-PA8304U	363

<b>II and IID</b>	IIP (available)	£ call
1MB	H33443B	134
2MB	H33444B	227
4MB	H33445B	399

### 5 AST MEMORY

<b>PREMIUM 386/25</b>		
1MB Kit	500718-001	145
<b>PREMIUM 386/33</b>		
1MB Kit	500718-002	162
<b>PREMIUM 386/C &amp; 386/16</b>		
1MB Kit	500510-007	132
4MB Kit	500510-008	397
*Upgrades for all other AST models are available. Please call for details.		

### 6 APPLE MEMORY

<b>MacINTOSH II, IICx, IIX</b>		
1MB Kit		58
2MB Kit		168
<b>MacINTOSH IICi</b>		
4MB Kit		327
<b>Laserwriter II/NTX</b>		
1MB Exp/Kit		157
4MB Exp/Kit		464

### 7 SIMM's & SIP's

Memory Module upgrades to suit all PC Models:	
AMSTRAD, AST, DELL, DEC, EPSON, EVEREX, HP, INTEL, IBM XT/AT'S AND CLONES, MITEC, NOVELL, OPUS, SUN, SILICON GRAPHIC PLUS ...	
Call our unique advisory service for upgrade assistance:	
256K x 8 - 100	20
256K x 8 - 80	23
256K x 9 - 100	26
256K x 9 - 80	29
256K x 9 - 60	38
1M x 8 - 100	67
1M x 8 - 80	70
1M x 8 - 70	74
1M x 9 - 100	75
1M x 9 - 80	79
1M x 9 - 70	84
4M x 8 - 80	635
4M x 9 - 80	690
CALL FOR SIP PRICING	

### 8 CHIP UPGRADES

DRAM, SRAM, EPROM and Co-Processors. Call for quantity prices and speed selections.	
64K x 1 - 100	1.15
256K x 1 - 100	1.85
256K x 1 - 80	2.25
64K x 4 - 100	1.95
1M x 1 - 100	6.45
1M x 1 - 80	6.85
256K x 4 - 80	6.85

### 9 AMSTRAD

1512 Upgrade	25
--------------	----

### 10 AMIGA MEMORY

<b>AMIGA 500</b>	
512KB with clock	75
without clock	65

### 11 MEMORY SURPLUS?

As a major player in memory orientated technology, Datrontech will always consider purchasing surplus and overstock products. Please call today - any quantity, configuration and capacity considered.

### FIND OUT MORE

Please send me more details on the following:

1	2	3	4	5	6	7	8	9	10	11
---	---	---	---	---	---	---	---	---	----	----

Please tick

Name .....

Company .....

Address .....

Tel. No. ....

# CALL 0252 313155



**DATRONTECH LTD**  
 Datrontech House, 33 Grosvenor Road  
 Aldershot, Hampshire GU11 3DP  
 Fax: 0252 341939





## A NEW WORLD OF COLOUR

The ST has, on occasion, been criticised for its lack of colour digitising facilities. Now, with the appearance of the Realtiser – a German system imported by Third Coast Technologies – this alleged deficiency has been put right.

The device works very fast indeed, digitising at speeds well under a second. To produce colour pictures you scan the same image three times, first in red, then in green and finally in blue.

Then, thanks to some clever trickery – it's the way your telly works – the Realtiser combines the three images into one. Once you've done that, you can import the picture in any of the popular paint packages and edit, cut, paste and alter the image and its colours to your heart's content.

It has to be said that the results are not of 'professional' standard. But at the remarkably low cost of £150, the

Realtiser does open up a new avenue for ST technobuffs to explore.

Indeed, now that the breakthrough has been made, there's every sign that more and more colour digitisers will appear. There are plans to market a video digitiser complete with an RGB splitter – doing away with the need for tinted filters. You can reach the good people at Third Coast on 0257 472444.

## HOW TO AVOID GEM

It's difficult to imagine anyone apart from Atari getting very excited about GEM (Graphic Environment Manager), the window environment you see when you switch on your ST. Now, however, an alternative has appeared for people who can stand GEM no longer – provided a hard disk is to hand.

*Mission Control* (geddit), which is not dissimilar to CodeHead's much praised *HotWire* – but is geared more to the programmer – enables you to install as many as 10 applications, thereby saving yourself all that searching around and hanging about.

All you have to do is identify what you want to load, set up the configurations and parameters, and *Mission Control* does the rest. Contact GFA Data Media for more details about the £29.95 *Mission Control* on 0734 794941.

## DISK FOR ADVENTURERS

*SynTax*, which claims to be the 'world's first ST magazine on disk,' is now up to issue 4. And very good it is too.

There's all that you would expect – news, reviews (lots of reviews, some very detailed), adverts, helplines, contacts, hints and tips and solutions.

## PLAYING TIP

# NINJA WARRIORS

Feeling depressed? How about some cheats to make *Ninja Warriors* a real laugh to play?

Hold down the Alternate key and type the following:

CASABLANCA – Black and white screen

GENESIS OF THE DALEKS – Negative screen mode

THE TERMINATOR – Ninja body parts explode when you die

MONTY PYTHON – Enemies come on backwards

SKIPPY – Enemies bounce

A SMALL STEP FOR MAN – Jumping baddies leap right off the screen

EAT TO THE BEAT – Press Q to toggle between slow and ordinary motion

There's more too: January's issue includes an interview with Steven Green, the programmer of Empire's *Sleeping Gods Lie*, as well as a couple of competitions and a selection of screens from upcoming titles.

Appearing bi-monthly and produced using STOS, each issue costs £3.50, or £20 for the year (including post and packing). Contact editor Sue Medley on 01-302 6598 (9 to 5, Monday to Friday), or on Prestel Mailbox 01-302 6598.

## ON THE MUSIC SCENE

*Sequencer One* is a new program that features 32 recording tracks, MIDI capabilities and graphic note editing. It costs £89 from Ampsound: contact the good people on 0727 50075.

A little lighter on the pocket is *Beat Box*, a US import courtesy of those diamond geezers at Third Coast. It's a sound introduction (geddit) for anyone just beginning to explore the possibilities of sampling, sound effects and all that kind of jazz.

You don't need any extra equipment, since it can – if necessary – use your monitor's speaker. It can't promise to sound brilliant, though! Contact the Third Coast team on, again, 0257 472444

## TOS UPGRADE SOON?

Why version 1.4 of TOS – the new upgrade to the ST's operating system – should have taken so long to arrive is not difficult to fathom. I dare say that Atari's recent bout of product launches (the portable Stacy, the upgraded ST, the STE and the top end TT machine, not to mention new Atari PCs) have kept it more than busy.

But there's a rumour that TOS 1.4 will soon be available for people to install on their own machines. It's already been released in a limited way, of course, being present in the Stacy and also having made an appearance with some Mega bundles.

Indeed, the people at Atari have had other things on their minds recently, such as coping with the horrendous STE uproar (see *Express*, *passim*). In fact, the STE actually has not 1.4 but version 1.6 of TOS onboard, and it's this in part that has been causing all the incomptability problems.

Don't get too excited, though, for the user-installable version of TOS 1.4, which is said to consist of a six-pack of ROMs, will set you back something over £40. More news as we get it.

## MOUSE VET TO THE RESCUE

Pity the poor ST mouse. No-one likes it very much, and it's prone to suffering a breakdown just when you need it most. Never mind, for Basildon-based Romulus

Data Systems can rebuild your rodent!

For just under £6 – little more than a quarter of the cost of a new one – you can have it thoroughly cleaned and its two switches (and any other faulty bits) replaced. And should the lead give out on you you can have that replaced too, for £8.50. Contact Romulus at 44 Ayletts, Basildon, Essex SS14 1UL.

## TACKY, THEM? (A: YES)

Still, there is a much cheaper way to get a new shell for your ST. Place an order for £6 or more with tacky Brighton PD library Paradise Computers and you'll receive a free Easter egg.

This is widely seen by commentators as an upmarket move for the tacky wacky funsters, who were previously offering a free condom. Avail yourself of this remarkable offer, or simply request a free catalogue, by writing to Paradise Computers at 9 Westfield Crescent, Brighton BN1 8JB.

Please note my admirable restraint in the egg pun department, by the way.

## ART ATTACK

From Switchsoft hails *Paintpot*, a new £19.95 ST art package. Phone 0325 482454 for more details.

## "SHAMELESS AND BLATANT"

To find out more about the Realtiser (see above) I strongly recommended that you get your hands on a copy of the February issue of *ST Format*, available from all good newsagents, a shameless and blatant plug for which (*ST Format*, that is, not newsagents) now follows.

It's packed with loads of goodies. On the Cover Disk you'll find a rather spiffing fully playable and utterly complete game called *Skate Tribe*, as well as what may well be the world's first sadistic virus killer, an interrupt-driven sound sample player, a K-crushing file compactor and, er, much more.

Inside the magazine there are new series on programming in C and desktop publishing, a review of *Script*, the best word processor yet seen on the ST, 20 pages of game reviews, a look at what is without doubt the best flying simulator ever and, er, much more. (OK Carey, that's enough blatant plugging for *ST Format*. Get on with it – ed.)

## SPREAD THE GOOD NEWS

If your news isn't featured here, it may be because I don't know about it!

So, if you're starting an ST PD library, adding exciting new ST titles, importing new ST software or whatever, let me know: Steve Carey, *New Computer Express*, Beauford Court, 30 Monmouth St, Bath BA1 2AP. Pip pip!

Steve Carey

## ST GAME of the WEEK

### EMPIRE • £24.95

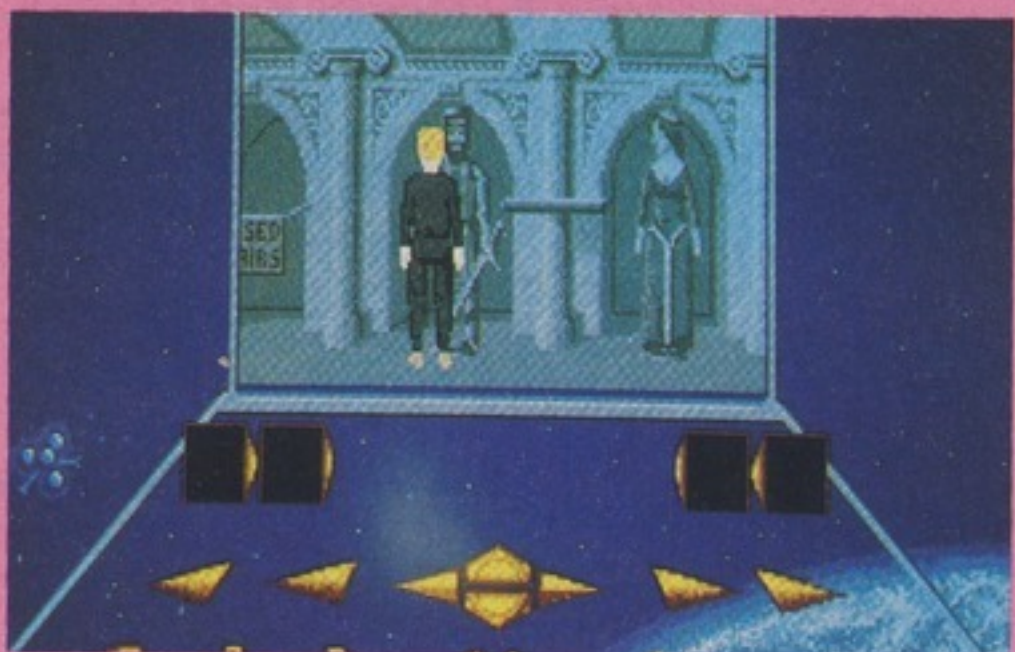
The last adventure we saw out of Empire's stable was *Sleeping Gods Lie*. Despite its innovative 3D environment, it never approached becoming a great hit.

Now *Time* is here, and it has gone right back to the original adventure format where a good memory and a pen and paper are all that's required.

*Time* is set on a futuristic space station. Earth is under threat from a self-replicating android that is about to totally annihilate both the home planet and your space station.

To rescue Earth, you must visit five different centuries in time during which you meet Merlin, Florence Nightingale, Julius Caesar, Leonardo da Vinci and the great Confucius.

The famous figures from history recharge a magic amulet for you, and then you dutifully return to your space station to discharge the amulet – a process



cess which neutralises the nasty androids.

The game is played with a viewing window surrounded by a series of icons. And the icons are used to provoke movement, speech or to pick up and use objects.

Speech plays an important role in the game, because as you wander around in search of time machines, you'll meet lots of characters. Clicking on the speech icon will make them talk and they'll give you hints on how to continue.

For example, to meet the doctor you must get passed his wife. She claims that she has a hungry cat and she refuses to talk of anything else.

The answer to this

overly-zealous loquaciousness is to go back several steps to the Sea World and talk to the character there until he eventually gives you a dead fish. Now take this back to the wife, and she will let you pass with a big smile.

*Time*'s biggest appeal is the way it guides you through the game. You aren't just set down in a space station and left to your own devices.

Instead, the characters help you through the game, and if ever you reach points where you're totally stuck, it won't be long before someone comes along to give you a new clue. Consequently, the ardent adventurer will find it boring – but anyone new to this genre will find it exciting and addictive.

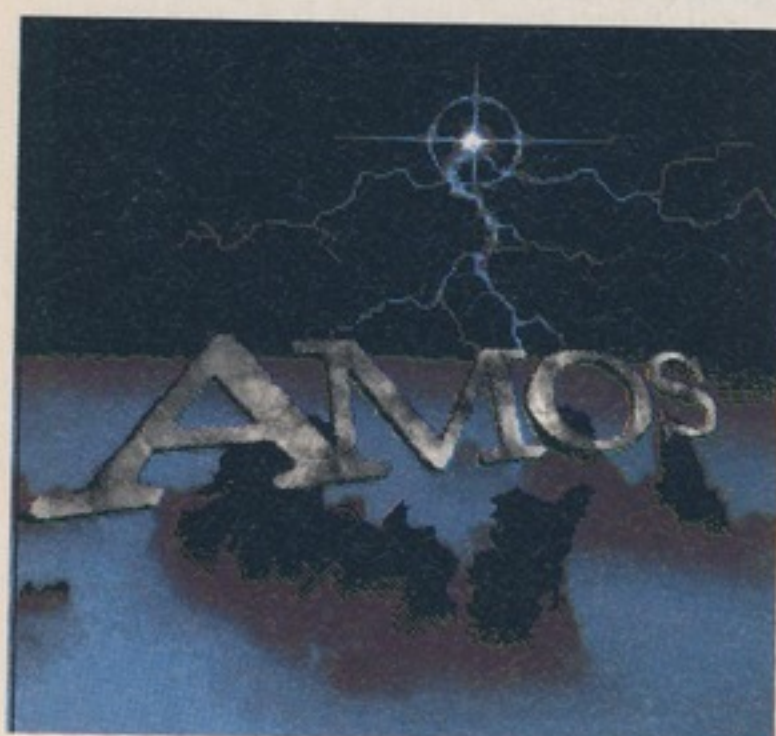


# AMIGA

## AMOS UPDATE

Are you perhaps still patiently waiting for the release of Mandarin's AMOS? If your answer is yes, then I've got some bad news for you – you've got an extra two months to wait. Yes folks – AMOS isn't going to be with us until at least May.

According to Mandarin, the BASIC language is done and only the AMOS Sprite designer and Music editor are still incomplete – on the software side that is. In fact, these remaining modules will take little more than a few weeks to finish, but the manual – yes, the manual – that is an entirely different story.



"We could just knock together a manual in a week or so, but we want AMOS to be as near to perfection as is possible," said a spokesperson.

Once the AMOS language reached a usable state, Mandarin immediately put its programmers and beta testers to work converting STOS (the ST version of AMOS) demos and games to work under AMOS. These demo-games will be bundled with AMOS and even distributed in the public domain as soon as the AMOS package is done. To back this up, Mandarin hopes to produce several books devoted to AMOS.

Also planned from Mandarin are AMOS versions of the STOS add-ons, Sprites 600 and Games Galore.

However, there are no plans at Mandarin to produce an AMOS version of its STOS Sound Sampler, Maestro, but the company is considering reworking an existing sampler and then rewriting the sampling software using STOS.

Additionally, plans are already brewing to produce an AMOS version of Rombo's Amiga video digitiser, Vidi, which will be called (not surprisingly) AMOS Vidi. Although the Vidi hardware will remain the same, the vidi-driver software will be rewritten in AMOS BASIC.

## HARDDRIVE SAVIOUR

Hands up all you Amiga 2000 users that still have the old 2090 hard-drive controller and 1.2 Kickstart. Bet you wish you could autoboot from your hard drive without having to shell out loads of dosh

for a brand-new hard drive controller and kickstart chip!

Well, now you can with the Centaur Autoboot Card from the Amiga Centre Scotland. The Centaur Autoboot Card sits on top of the 2090 and allows the hard drive to autoboot from both warm and cold start without having to fit the machine with Kickstart 1.3 (although 1.3 users can also utilize the autoboot card – why they would want to, I don't know!).

Additionally, with the Centaur Autoboot Card any hard drive can be defined as the boot device. Indeed, the system will even boot from a Seagate-SCSI drive (which, by the way, isn't even possible with the 2090A).

There is some bad news, of course. Unfortunately, it isn't possible to just whack the board onto your 2090 and start working. Even if you use an older version of the hard disk device-driver (which will be all right for a while), your hard drive will eventually have to be totally reformatted.

Fitting the card, on the other hand, is simplicity itself. All you have to do is open up your 2000 and slot the card into any one of the 100-pin connectors on the main board – and away you go!

The Centaur Autoboot Card is available for the sumptuous sum of £60 from the Amiga Centre Scotland, who can be contacted on 031-557 4242.

## DESKTOP VIDEO NEWS

For those of you who use the Amiga for professional video applications, Interactive Media Resources has announced the release of the Multi-dat device. The device is a high-quality RGB distribution amplifier which allows up to four RGB monitors to be connected to one computer.

Because the Multi-dat uses RGB signals – instead of the usual composite video – Amiga graphics can be distributed down long cables without the degradation usually associated with video signals. Even High resolution screens remain pin sharp.

IMR claims that the system is suited to applications such as public information systems in shopping centres, bus stations, train stations, sporting venues, exhibitions and for teaching tools within the classroom and lecture theatre.

The Multidat costs £175 and is available from IMR on 0902 25444.

Jason Holborn

## AMIGA GAME OF THE WEEK

MIRRORSOFT • £24.95

After triumphs with *Borodino* and then *Waterloo*, Dr Peter Turcan has turned his attention towards the battle of Austerlitz.

As with his war simulations in the past, which were renowned for their devotion to realism, Turcan's *Austerlitz*, too, isn't presented as a map with armies of troops for you to move.

Instead, you're provided with the ultimate viewpoint – you see the battlefield exactly as your leader would have seen it.

As a result you can't simply sit back and watch the fighting – you must get in there and get dirty, by dispatching riders as would a field general. These riders then inform you on the state of battle and the condition of your troops.

The riders also carry orders to troops stationed at the front line – but beware, because the riders may be killed on their way and orders may never reach their intended destination.

Judgements about the units you wish to dispatch must be based on the information you gather. Since you cannot see the formations of the enemy, however, you'll find you end up planning the battle on paper.

The real battle of Austerlitz was fought between Napoleon and the allied forces on December



2, 1805. Napoleon marched to victory by pinning the Allied centre and right flanks with a frontal attack and circling around from the South. Considerable research has gone into making certain the game portrays reality as rigorously as possible – you can either replay with historical orders or issue your own.

*Austerlitz* is played as a series of turns. Within each turn, you have 15 minutes of simulated play in which you can issue eight orders. The orders must be constructed using a very precise

and logical language. For example, Keimayer – transfer your cavalry to Langeron – is an instruction issued to a Captain to move his cavalry.

Also, troops must be strategically positioned around the map to give the maximum effect. Various commands exist to lend support to front-line troops, to defend spots and to form attack/defence lines.

*Austerlitz* betters its predecessors and, indeed – if you're looking for the ultimate in wargame simulations – there's no beating it.



Mail: Keimayer, an order has arrived from Alexander. Attack Tellnitz.

## DMA BY DESIGN

Anyone remember the Expert System and Action Replay utility cartridges that proved so popular on the Commodore 64?

Those of you who do remember that era of slow disk drives, appalling BASICs and massive colour palettes of little more than 16 colours will no doubt also remember how invaluable the cartridges were.

And did you know that the lowly ST has already gained its own utility cartridge in the form of Romantic Robot's Multiface? Perhaps you would like to know where all the Amiga utility cartridges are?

Ask no more, for DMA Design is soon to release a utility cartridge in the shape of the Monster Cartridge. Indeed, most Amiga owners will immediately recognize DMA for its sterling

contribution to the Amiga games scene.

Headed by Dave Jones – who I know reads this column every week, so I'd better be careful what I say – DMA is responsible for two of the most popular Amiga forays of all time, *Blood Money* and *Menace*.

However, before Dave moved into games-programming, he worked at Timex for a short spell, developing the early range of Spectrums. Therefore, a move into the hardware market for DMA Design was very nearly inevitable.

Anyway, the complexity of the Amiga's hardware requires that the Monster Cartridge employ its

own Z80 processor (yes, the very same processor that drives the Spectrums and Amstrads of this world) and feature its own ROM and RAM. Further, as the software is disk-based, the Monster Cartridge is fully configurable.

Additionally, the cartridge can be used to stop just about any program in its tracks (games, demos – the works). And once the program has been halted, the cartridge allows you to carry out several different operations.

Features of the cartridge include: full 68000 disassembler, slow mode (slows down games up to 100 times from their original speed) and screen grabbing

in IFF format.

The cartridge will be made available in two configurations – Monster 16 (at around £70) and Monster 64 (for about £90), which offer, not surprisingly, 16K and 64K of RAM respectively.

Find out more by writing to DMA at: Dept MSJ, 134B Nethergate, Dundee DD1 4ED. Readers may also be interested to know that Dave is currently writing a series of articles for *Express'* sister publication, *Amiga Format*.

In these articles, Dave reveals the secrets of his profession. Not only that – but the articles are backed up by the complete source code to Dave's first game, the aforementioned *Menace*. *Amiga Format* is available from newsagents on the first Thursday of every month.



# SPECTRUM

## SOUND WAVES

Everyone already knows about the Plus 3 distorted sound problem and the way it turns the most melodic tune into fingernail-on-blackboard/New Kids on the Block-type noises. But there could now be another reason for Plus 3 owners to pin a life-size picture of Alan Sugar to their dartboards.

According to the latest issue of *Plus 3 Contact* – the magazine of the Plus 3 Users' Group – Spectrum Plus 3's, which are still issued in the Sinclair Action Pack bundles, could conceivably have problems when formatting and writing to discs.

Apparently, the problem lies in the Plus 3 having 'difficulty in making the small space between each sector on the disk a consistent size,' but it can render whole disks unreadable.

Fortunately it's not quite as bad as it first appears because a problem only usually comes about when you try to access a disk that's been formatted by a Plus 3 that carries the inaccuracy problem. Every Plus 3 should be able to read disks that have been formatted in its own drive, even if they suffer from the inaccuracy fault.

The Plus 3 Users' Group has also come up with a few possible cures to the problem. The people there suggest using a drive head cleaning disk or trying to copy a suspect disk to a clean one of your own when the machine has just been switched on. They think the Plus 3 might be a bit more understanding towards disk errors when it's cold.

So, the fault doesn't look like being quite as drastic as the distorted sound thousands of Plus 3 owners suffer from, but it's another clear example of

Amstrad ineptness and apparent lack of care for the customer. Any pro/anti Amstrad comments to me c/o Express.

## VIDEO WAVES

Sam Brewer of Suffolk writes to say he's heard about video digitizers for other computers and wants to get down to some serious digitizing with his Speccy. "Are any video digitizers available for my chosen machine?" he enquires.

Affirmative Sam – there are at least two of these natty hardware add ons available for the Spectrum, although I've never had the pleasure of digitizing with either of them.

1) Romantic Robot (54 Deanscroft Ave, London, NW9 8EN) sells a digitizer by the name of Videoface for £29.95, which strikes me as being pretty cheap.

2) The other model available is the Vide-ZX at £34.95 from P C G (61B School Street, Barrow-in-Furness, Cumbria, LA14 1EW) and I've received a few letters in the past recommending this particular make. Both peripherals can grab images from a normal video recorder or camera and then allow you to alter and generally mess around with the captured screen.

## MAKING WAVES

EEC Ltd seems to be selling just about the cheapest Speccys in Britain if my calculations are correct. Its 48K+'s are priced at the bargain rate of £69 with 128K machines selling for only £89. You can make contact at 18-21 Midsbury House, Chiltern Hill, Chalfont St Peter, Bucks, SL9 9UE.

Robin Alway

## HACK ATTACK

Mark Taylor of Manchester isn't happy unless he's hacking into some poor helpless game and demanding infinite amounts of various things. Here's his latest seemingly-infinite list of Multiface pokes. Naturally you'll need to have a Multiface or similar interface.

GAME	POKE	EFFECT
Arkanoid 2	33055,255	
	33909,0	Infinite lives
	40420,x	x = Ball speed
Aliens	31014,0	
	30768,0	
	34484,195	No capture
Barbarian 2	40159,0	Energy
	38508,0	Lives
	54067,0	
Batman (new one)	54832,201	
	54708,0	
	54719,195	Time and Energy
Dynamite Dux	44277,0	
	44401,0	Immortality
	53246,14	Lives
H.A.T.E.	53246,14	
	33310,x	x = number of lives
	33310,x	
Indiana Jones & the Last Crusade	33310,x	
Karnov	36847,201	
Last Ninja 2		
(Level 1)	36576,198	
(Level 2)	35993,198	
(Level 3)	36751,198	

The only thing Mark wants in return is for me to say hello to his two chums Dave and Vince, which seems like a pretty good deal for me. I will also be sending Mark a free piece of software for a truly top hole display of poking, so if you've got pokes, hints or cheats for any Spectrum games direct them to in to me!

# PCW

## PATTERN BOOK

It was Arthur Marshall who invented the phrase 'it is all part of life's rich pattern'. He never had a PCW, but if he had one, and if he were alive today, and if he had £X, he could play with life's rich patterns on his machine.

HTB Computers of Romsey has brought out a suite of puzzles in which you shift patterns around the screen rather like those number puzzles where you always end up with 1 to 15 in the square in the right order except for 7 and 9 which are the wrong way round.

There's a homespun feel to the program, and it provides light relief from novel writing. Details on 0794 516279.

## I GOT BIORHYTHM

Two men, Drs Fleiss and Swoboda, reported at the turn of the century that certain individuals appeared to experience 'ups and downs' in regular cycles. No doubt any woman could have told them that without trying – but the good doctors findings have since been enshrined as 'biorhythms'.

The theory states that we all work in 23-day physical, 28-day emotional and 33-day intellectual cycles of ups and downs, starting from the moment we're born (and not conception, when most religious and scientific commentators would say life begins).

Anyway, *Biorhythm*, a new package from IMC (phone 0604 54814) will tell

## ASCII NICELY

To save a listing 'THING' in ASCII form, type

SAVE "THING.BAS",A

– you can still LOAD it, edit it, RUN it etc. in the normal way.

To see what's in it, type

TYPE THING.BAS

and the contents will be displayed instantly – much quicker than having to LOAD it and LIST it.

you your biorhythms for any day, and allow you more sophisticated options such as testing your bio-ratings against your actual performances, plus bio-notes, bio-diary and bio-planner, and probably baby-bio too.

This package is assuredly fun for all the family, if a bit expensive at £20. Still, there are similar programs available in the public domain – try the people at Advantage on 0242 224340.

## HE, BREWING UP

LocoScript may seem a foreign language already to many users.

Now, however, you can get a Hebrew version of LocoScript 2. It's from Dr David Brewer, who designed the thing himself. This version mixes English, Hebrew and Greek symbols and costs just £13.95 from him on 0954 781655.

Rob Ainsley

# MSX

## GRAND CENTRAL

A couple of weeks ago, I mentioned that the MSX user group MSX Central was able to supply certain items of hardware and software, most of which has, up till now been unavailable in the UK. I have already mentioned the MSX 2+ computers and the price of these machines, this week I will concentrate on some of the other items that are listed.

Firstly, there are a range of tools for the would-be programmer, such as MSX DOS Tools (with English instructions), MSX S Bug (English instructions), MSX Plan (ROM), and MSX C, Version 1.2 (English instructions). The prices of these items are from £82.00 for MSX Plan, up to £130.00 for S Bug – expensive items I think you will agree.

An ASCII hard disk interface is also available for £212.00: I presume it will then interface to any popular hard drive. 128K and 256K RAM expansions are on offer – priced at the sums of £112.00 and £139.00 respectively.

I do not know if these expansions will work on MSX 1 and 2 computers, MSX Central is, as yet, unable to confirm that the RAM packs are totally MSX compatible, or just for the MSX 2+. More info when I receive it.

The rest of Central's list is mainly software, and includes *Disk Station 1* to 7 on three double-sided disks, £15.69, and a title I would love to have but at £76.00 is much too expensive – the game *Gunship 3D Helicopter Simulator*.

I don't think Central will have many

orders for software at these prices. There are one or two other interesting items on the list, but space does not permit me to enter into further detail. For more information, contact MSX Central, 14 The Wardens Avenue, Allesley Village, Coventry, CV5 9GJ – and don't forget the SAE.

## A DELIGHTFUL SPRITE

Several weeks ago a letter arrived asking if I knew the code that allowed the end sequence of Konami's *F1 Spirit* to be viewed. Well, Mr Ellis of Edinburgh, after a great deal of searching, and even longer tidying up afterwards, I can tell you the code.

Type in the following ... MITAIYOEND-DEMO. This should do the job. I just hope the ending is good, and that the search was worthwhile!

## A FEW THINGS

This week I received a special audio lead that is designed to connect your MSX computer to your Hi-Fi, thereby making the most of your MSX's sound capabilities – particularly the Konami carts with the SCC chip that make for eight-channel sound. The lead is two metres in length and it retails at £2.49.

Although I have been unable to try the lead, I can already well imagine *Nemesis III* at 60 watts per channel. At any rate write to Sphinx Software, Erw Fyndd Carmel, Llanelli, Dyfed SA14 7SG.

Keith Neal





## FEAR AND SHIVERS

Educational computing – two words guaranteed to send shivers of boredom down the spine of any self-respecting computer hack. But look again, for here is a market absolutely exploding into action as the new government regulations come into force.

Judging by the BETT90 show which I attended recently, that fiery expansion has already started. So just for this column, I am abandoning my usual mixture for a brief rundown of all that appeared new and interesting at BETT90.

Although Acorn had no Master 128s at its stand, it did launch a CD-ROM drive for the show, and representatives were at pains to point out in press releases the main use of the device on mixed Arc/Master networks. Overall there was a strong multi-media flavour with CD-ROMs and hypertext being prevalent throughout. Software star was undoubtedly Genesis from Software Solutions, present on just about every stand.

There were many BBCs at the show, and I saw our machine doing all sorts – running programs, naturally, but also connected to measuring instruments, robots, heavy duty tools and projectors.

ESM, for example, had a colourful new catalogue with such items as *Network Folio*, *Kaleidoscope* and *Frieze*. Interestingly, relevant sections from the new National Curriculum were quoted next to each piece of software.

Data Design, progenitor of the popular *Designer Castles* program, has now come up with an additional package called *Medieval Villages*. In this newest a freehand drawing module gives extra flexibility, while huge printouts are also made more readily possible.

Virgin Publishing has released a new Videodisc for the BBC Master Interactive Video system. Called *North Polar Expedition*, it is based on the real exploits of Sir Ranulph Fiennes. As a promising 'Boys Own'-type adventure, the package allows group working in a very realistic atmosphere. A CD-ROM version is also on it's way, and both are priced at the sumptuous sum of £199.

Many smaller software houses were also present. "There are thousands of Model B micros still out there, and I will continue to support them with chemistry software as long as there is a demand," said Bill Wain of Q2 software. Indeed, most of the smaller stands did look to be doing good business, which is an encouraging pointer for this mainly BBC-based part of the market.

## EAGLE EYE

In a wider context, remarks made by the Education Minister partly explain this surge of interest in education, particularly by large companies like Apple and Commodore. In short, the Local Management for Schools (LMS) budget will increase to £25m – up from £15m. IT in schools has a budget of around £10m, while the equipment budget for the National Curriculum, despite what some say, rises to £17m next year.

Obviously there is far and away too much here for detailed coverage. So in the next few weeks I'll try and analyse in greater depth some of the items launched at BETT90.

Andrew Brown

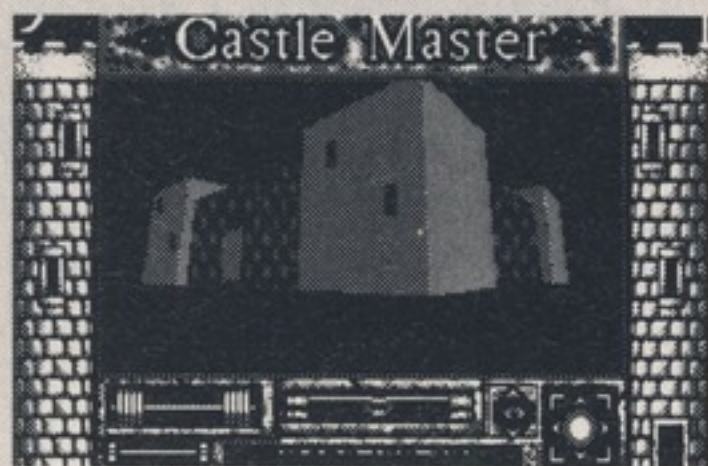
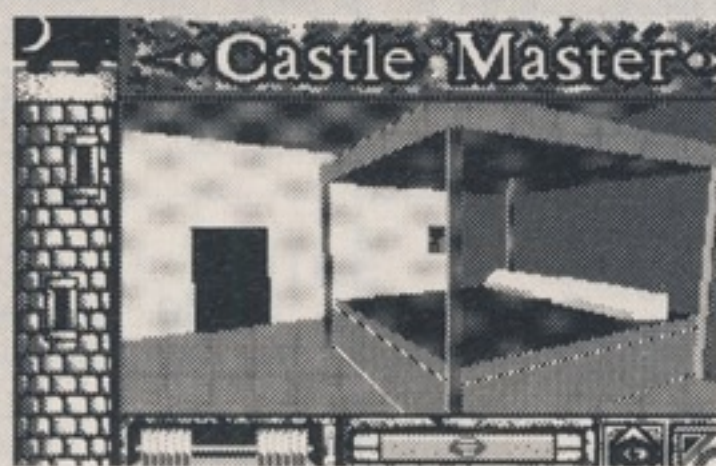


## CASTLE MASTER PREVIEW

All those Freescape addicts who just can't wait to see what the new Domark/Incentive blockbuster *Castle Master* is going to look like – wait no more!

Which doesn't actually mean that it's finished yet. I can, however, reveal exclusive – never seen before – screenshots of the CPC version.

Expect a full review of *Castle Master* soon. In the meantime, just check out the screenshots and drool...



## MURPHY'S LAW

T'was with sinking heart and tired sigh that yours truly loaded up Tynesoft's latest, *Beverly Hills Cop*. I've never been a terrific fan of Eddie Murphy anyway, and the prospect of a game-of-the film was none too appealing. And it didn't help that the game came from Tynesoft – let's face it, they're not usually quoted in the same breath as the Oceans of this fair world.

However, I was wrong. *Beverly Hills Cops* follows the now-traditional formula of scenes-from-the-film made into individual multi-load stages. The sub-games work as a sort of mini-compilation, featuring different styles and perspectives each time. The plot is not one from any specific film, but the individual scenes are reminiscent of some of the scrapes that lovable, fast-talking cop has got himself into.

Level One is a *Rolling Thunder*-style platform-wandering shoot-'em-up. Your aim is to wipe out all the bad guys at a smugglers' HQ. You dodge between crates, blasting away at the felons, who've been stockpiling arms ready for

a major ship-out.

Level Two's more of a *Chase HQ*-style game. You're now driving a Mercedes, chasing after escaping vans and wiping them out as they chuck huge crates in your path.

Level Three is different again. Here, you view your character almost-but-not-quite from directly above. Your job here is to get to the mansion of the big gangland boss himself, the problem being the 40-odd guards waiting in the grounds for the chance to wipe you out.

The final level takes place inside the mansion. You get a pseudo-3D view of the corridors and rooms as you wander round zapping guards and looking for the Head Man. Oh, and there's a hostage to find too. Ah yes – have I told you – there's a bomb planted somewhere in the building.

The graphics are competent – if not inspiring – with a couple of quite-good between-level screens depicting our hero either jubilant or *in situ* in hospital, depending on whether you came through or not. The soundtrack ain't too bad, neither.

The levels are varied and quite playable, and the whole thing hangs together quite well. Not a bad little game. *Beverly Hills Cop* costs £9.99 on tape and £14.99 on disk.

## MONITOR MARVELS

How fascinating! This letter from a Mr Steven Burrows fell through our letter-box the other day:

"On hearing Dixons were not to restock their shelves with CPC hardware, I enquired about any surplus monitors (colour) for my 6128. They got me one for £99.99. I snapped their hands off! I own a 6128 with green screen, the kids have a 664 with MP2. I needed the colour monitor so the kids could use the green screen.

"The man at Dixons said he had in the region of 30-surplus monitors in stock, and having seen so many adverts from people needing colour monitors I thought it an ideal chance to let your readers know of this surplus.

"The address of the branch is: Dixons, Cheapside, Barnsley, South Yorkshire."

Blimey! Bearing in mind that until now the probability of finding somewhere selling CPC monitors on their own has been precisely zero, this is great news. If you're in the market for a new screen, Dixons could quite well be the bunch to talk to.

Rod Lawton

## GOING UNDERGROUND

Graham Smith has produced this wonderful infinite lives routine for the Adam Waring classic *Lost Caves* (£10 in used oncers please – Adam). Simply run the poke and then load the game.

The codes at the start of each line are not to be typed in but can be used to check your typing utilizing the Typewriter program published in sister mag *Amstrad Action*.

```
{EuAr} 1 \ Lost Caves -tape-
{HvAq} 2 \ By Graham Smith
{EwAs} 3 \ Infinite lives
{JsAm} 4 \ Method 1
{FuAj} 5 \
{JlAt} 10 DATA c4,14,ac,af,32,21
{EsAu} 20 DATA 11,fb,c9,3e,8f,32
{HnAv} 30 DATA 7f,41,3e,b3,32,cc
{BwAu} 40 DATA 41,21,62,46,36,92
{HkAt} 50 DATA 2b,36,83,2b,36,df
{AuAp} 60 DATA c3,05,40
{GjAs} 70 FOR j=0 TO 32:READ a$
{DsAt} 80 x=VAL("&"a$):y=y+x
{PxAt} 90 POKE j+48640,x:NEXT j
{MuAs} 100 IF y<>3335 GOTO 130
{HiAr} 110 MEMORY &3FFF:LOAD"
{EpAp} 120 CALL 48649
{KiAq} 130 PRINT"data error 1"
```

# YOUR FORMAT

PC	10
ST	12
Amiga	13
Spectrum	14
PCW	14
MSX	14
BBC	15
CPC	15
Atari XE	18
QL	18
Archimedes	18
C64	18



# Dowling

MAIL ORDER DIVISION

# COMPUTERS

**HEAD OFFICE:**

Unit 48

Tyne Road


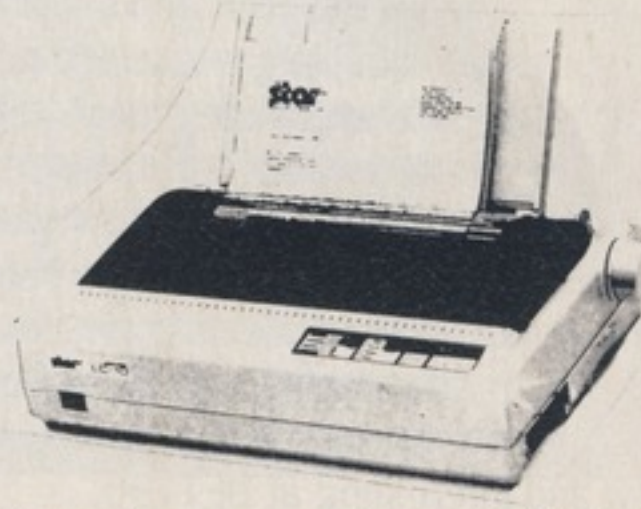
Sandy, Beds, SG19 1RB

Tel: 0767 81750/60

Fax: 0767 81730



**FOR A CUT ABOVE THE REST -TRUST THE BEST!**

PRINTERS	RRP	OUR PRICE	 <b>THE star</b> COMPUTER PRINTERS = Registered Dealer =	
Star LC10 Mono 144/36 C.P.S	£229.95	£149.95		
Star LC10 II 25% Faster version	£263.35	£169.95		
Star LC10 Colour, 7 colours	£297.85	£189.95		
Star LC24-10 - 24 pin multifont	£343.85	£229.95		
Amstrad DMP 3160 Suitable for: Spectrum +3/ST/Amiga/PC/BBC	£199.95	£139.95		
Citizen 120D for C64/128/+4	£159.95	£129.95		
Star LC10 Sheet Feeder (auto)	£74.75	£49.95		
Star LC10 Mono Ribbons	£5.95	£3.95		
Star LC10 Colour Ribbons	£7.95	£5.95		
Star LC24-10 Ribbons	£7.95	£5.95		
Star LC10 Quality Dust Cover	£7.95	£5.95		

Being Star registered dealers we only sell official UK machines which come with full 1 year guarantee. Beware of inferior imported products

COMMODORE 64 COMPUTERS AND ACCESSORIES	RRP	OUR PRICE	SPECTRUM COMPUTERS AND ACCESSORIES	RRP	OUR PRICE
Commodore 64C Computer + Cassette unit	£139.99	£109.99	Sinclair Spectrum +2 computer + joystick	£139.99	£109.99
Commodore 64C Light Fantastic Pack inc Light Gun	£149.99	£139.99	Sinclair Spectrum +2 Action Pack, Lightgun, Games etc	£149.99	£134.99
Commodore 1541 MKII Disk Drive, Separate P.S.U	£169.99	£129.99	Sinclair Spectrum +3 Computer + Joystick	£179.99	£159.99
Citizen 120D inc. Cable for C64/+4	£159.99	£129.99	Sinclair Spectrum +3 Action Pack, Lightgun, Games etc	£199.99	£179.99
Commodore 64/Plus 4 Power Supply Unit	£29.99	£19.99	Sinclair Interface 1 unit	£49.99	£34.99
Datex Mouse for C64, works with OCP Art Studio	£29.99	£19.99	DMP 3160 NLQ Printer, Friction/Tractor, inc +3 cable	£199.99	£129.99
C64 Sound Studio Music Pack	£6.99	£2.99			

HIGH QUALITY BULK UNBRANDED	RRP	OUR PRICE	BRANDED DISKS	RRP	OUR PRICE
50 x TDK 3 1/2 unbranded	£49.99	£31.99	3 1/2" MF2DD Box of 10	£9.99	£6.99
100 x TDK 3 1/2 unbranded	£99.99	£59.99	3 1/2" Sony DS/DD 135TPI Box of 10	£19.99	£9.99
3 1/2 40 capacity lockable disk box	£9.99	£5.99	3 1/2" Sony High Density Box of 10	£39.99	£24.99
3 1/2 80 capacity lockable disk box	£14.99	£7.99	5 1/4" 3M/Verbatim DS/DD Box of 10	£14.99	£7.99
5 1/4 70 capacity lockable disk box	£9.99	£5.99	5 1/4" 3M/Verbatim High Density Box of 10	£29.99	£14.99
5 1/4 110 capacity lockable disk box	£15.99	£8.99	3" Amsoft/Maxwell Box of 10	£29.99	£24.99
3 1/2 Disk Wallet (holds 30)	£9.99	£6.99	1000 x 3 1/2 disk labels	£19.99	£9.99

JOYSTICKS ★ LIGHTGUNS ★ INTERFACES	RRP	OUR PRICE	JOYSTICKS ★ LIGHTGUNS ★ INTERFACES	RRP	OUR PRICE
NEW: Cheetah Exterminator joystick	£5.99	£4.99	NEW: Quickjoy 'Superboard' timer (battery req'd)	£19.99	£15.99
RAM Delta 2000 joystick - 6 microswitches	£9.99	£6.99	IBM joystick + card + 4 quality games inc Robocop	£49.95	£38.99
NEW: Quickjoy Junior handheld	£6.99	£5.99	Cheetah Defender, Lightgun + 6 games for Spec 128/+2/+3	£24.99	£19.99
Zipstick Sureshot standard - microswitch clear J/S	£9.99	£6.99	Cheetah Lightgun + 3D glasses + games for C64	£39.99	£34.99
Zipstick Superpro Autofire - the best	£16.99	£9.99	Spectrum 48/128/+2/+3 joystick interface (clear)	£9.99	£6.99
NEW: Quickjoy III Supercharger - microswitch J/S	£12.99	£9.99	Sinclair +2/+3 joystick adaptor lead	£4.99	£2.99
Zipstick Sureshot Supreme - microswitch J/S	£16.99	£9.99	Sinclair Spectrum +3 Cassette lead	£6.99	£3.99
Cheetah Starprobe - Top of Cheetah Range	£14.99	£10.99	Sinclair Spectrum interface 1 unit	£49.99	£34.99
NEW: Quickjoy Jetfighter - Supermicro J/S	£14.99	£10.99			
Dynamics Pro glo Green/Red	£16.99	£12.99			
Zipstick Command module - very durable M/S	£17.99	£13.99			

SEGA HARDWARE AND ACCESSORIES	RRP	OUR PRICE	BARGAIN BASEMENT	RRP	OUR PRICE
Sega Master System inc. 'Hang on Game'	£79.99	£69.99	Amstrad PC/IBM compatible software pack comprising * Wordstar * Supercalc * Account	£299.00	£49.99
Sega Master System Plus inc Lightphaser	£99.99	£89.99	Amiga Ten Star Pack inc Ikari Warriors, Buggy Boy etc	£228.00	£34.95
NEW★ Sega Handle Controller	£39.99	£36.99	Amiga Music X 'state of the art music package'	£229.99	£149.99
NEW★ Zipstick Sureshot Supreme Autofire			Amiga/Atari ST/ BBC monitor plinths	£29.99	£14.99
Sega J/S	£16.99	£12.99	Atari ST Metacomco Basic	£24.99	£6.99
Quickshot Microswitch Sega joystick with autofire	£14.99	£11.99			

## Why Dowling Computers?

Here are just a few reasons why customers prefer us

★ First and foremost  
We really CARE about  
our customers' needs

★ ALL OUR STAFF are  
trained to give a  
friendly personal  
service.

★ EMPLOYING  
ENGINEERS ourselves,  
we won't send repairs  
away for weeks on end!

★ That's why we at  
Dowling say  
"FORGET THE REST  
TRUST THE BEST"



# The Best Possible Service at the lowest possible prices!

*All prices include VAT, Delivery and full 1 year guarantee!*

**NOW IN STOCK - F29 RETALIATOR** RRP £24.99  
★ NEW ★ DOWLING'S 16 BIT TOP TEN BESTSELLERS ★ NEW★ **OUR PRICE £16.99**

ATARI ST			AMIGA			IBM PC		
TITLE	RRP	OUR PRICE	TITLE	RRP	OUR PRICE	TITLE	RRP	OUR PRICE
1 Chase HQ	£19.99	£12.99	Chase HQ	£24.99	£16.99	Populous	£24.99	£16.99
2 Fighter Bomber	£29.99	£19.99	Hard Drivin	£19.99	£12.99	Leisuresuit Larry 3	£44.99	£29.99
3 Ghostbusters 2	£24.99	£16.99	*NEW* F29 Retaliator	£24.99	£16.99	Chessmaster 2100	£24.99	£16.99
4 Double Dragon 2	£19.99	£12.99	Operation Thunderbolt	£24.99	£16.99	Fighter Bomber	£34.99	£22.99
5 Batman The Movie	£19.99	£12.99	Ghostbusters 2	£24.99	£16.99	688 Sub. Sim	£29.99	£19.99
6 Untouchables	£19.99	£12.99	*NEW* Player Manager	£24.99	£16.99	Populous New Worlds	£9.99	£6.99
7 *NEW F29 Retaliator	£24.99	£16.99	Kick Off Extra Time	£9.99	£6.99	*NEW* F29 Retaliator	£29.99	£19.99
8 Ninja Warriors	£19.99	£12.99	Double Dragon 2	£19.99	£12.99	Star Trek V	£29.99	£19.99
9 *NEW Player Manager	£24.99	£16.99	Space Ace	£44.99	£29.99	Battle Chess	£24.99	£16.99
10 Hard drivin	£19.99	£12.99	Beast	£34.99	£22.99	Robocop	£19.99	£12.99

## AMIGA 500 COMPUTER AND ACCESSORIES

1 YEAR GUARANTEE	RRP	OUR PRICE	OFFICIAL UK VERSIONS	RRP	OUR PRICE
Amiga 500 + mouse, modulator + manuals	£369.95	£329.95	Batman the Movie + N.Z Story + Interceptor	£74.99	£24.99
Amiga 500 Batman Pack, D Paint II etc	£399.95	£349.95	Deluxe Paint II + Photon Paint	£99.99	£29.99
Amiga 500 Batman Pack + Tenstar Pack	£439.95	£369.95	Aegix Sonix V.2.0 Music Package	£69.95	£29.99
As above plus 10 disks, mouse mat, joystick	£459.95	£379.95	T.V Modulator Extension Lead	£14.99	£9.99
Amiga 500 computer + 1 meg expansion	£499.95	£399.95	Amiga Scart Monitor Lead	£14.99	£9.99
Amiga Batman Pack + 1 meg expansion	£539.95	£419.95	4 Player Adaptor	£9.95	£5.95
As above + Tenstar games, 10 disks	£589.95	£449.95	High Quality Fire Retardant Dust Cover	£9.99	£4.99
Amiga Class of the 1990's Pack	£573.85	£499.95	Standard Amiga Dust Cover	£4.99	£2.99
Cumana 1 meg quality drive	£89.95	£79.95	Quality Mousemat	£6.99	£3.99
D501 1/2 meg upgrade with clock	£99.95	£64.95	'Cyclone' back up device	£29.99	£19.99

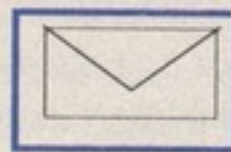
## ATARI 520STE COMPUTER AND ACCESSORIES

★ NEW ENHANCED STE★	RRP	OUR PRICE	FULL 1 YEAR GUARANTEE	RRP	OUR PRICE
Atari 520 STE Explorer Pack	£299.95	£259.95	Kempston Daatascan + Hyperpaint + Hyperdraw	£299.95	£229.95
As above + Hyperpack + Metacomco Basic	£329.95	£269.99	"Genius" high quality ST replacement mouse	£29.99	£22.99
Atari 520STE "Powerpack"	£399.95	£339.95	High Quality Dust Cover	£9.99	£4.99
As above + 10 disks + mousemat + joystick	£429.99	£349.95	Quality Mouse Mat	£6.99	£3.99
Atari 1040 STE + Hyperpack + M Basic	£499.99	£429.99	"MASTERSOUND" ST music package	£30.99	£29.99
Cumana 1 meg quality Drive	£99.99	£89.99	Powerpack software inc, Outrun, R Type etc	£500.00	£79.95

**ORDERING  
MADE  
EASY**



Order by phone by  
calling our Head Office  
quoting your  
Access/Visa Number



Order by Post - make  
Cheques, Building Society  
Drafts or Postal Orders  
payable to  
Dowling Computers



## ➤ QL

### MEGA RAM

One of the more interesting add-ons available for the QL is ABC-Elektronik's Mega RAM, which provides a full additional megabyte of RAM. The board contains a new version of the QL's MC68008 processor that can address a total of 4Mb, while the standard MC68008 can only handle up to 1Mb.

It is advisable to put the QL in a larger case if you add the Mega RAM, as it mounts on top of the QL circuit board. This would also minimise overheating problems. I have heard that the modifica-

tion is tricky, and should be attempted by people with hardware expertise.

Mega RAM costs £195 with RAM, and £99 without RAM, and ABC-Elektronik is at Hugelstr, 10-12, 4000 Bielefeld 1, W. Germany, Tel:0521-890381.

### QUANTA DOINGS

QUANTA has organised a workshop for Saturday, February 3. The venue is Papworth Village Hall, near Cambridge. Everyone is welcome. Further details from Phil Borman on 0472 349850.

John Torofex

### QDOS DISK FORMAT (PART 3)

A map of sector allocations follows the header (described last week). This always fills the first three – logical – sectors of the drive, padded with dummy sectors if necessary so as to fill the  $((512 * 3) - 96) / 3 = 480$  bytes allowed. A 720K disk has a sector allocation size of three, that is, three groups per side.

The medium name, random number and update count allow QDOS to detect when a disk is changed. The update count also indicates if a disk has been put in another drive (or another machine), written to, and then put back in the same drive. Clever!

Sectors are allocated to files in multiples of the allocation size, which seems a bit wasteful – a one byte file will take up three sectors.

The logical sector is derived from the sector map by the following formula:-

$(\text{sector in map} * \text{alloc size} + \text{sector in alloc group}) \text{ MOD sectors/cylinder}$

Additionally, in the logical to physical translation table published last week, the MSB of the translate byte indicates the side number. The remaining seven bytes give the sector number (0 - 8).

## ➤ XE

### PRINTER PROBLEMS

I've a letter from P Mann of Bantry Bay, County Cork, who recently bought a Star LC10 printer and a Tandata TM500 modem. Mr Mann wants to use both of these peripherals with his Atari 800XL.

All is well, because Computer House of Earl's Court, London has the answer to P Mann's prayers. For the incredibly-cheap sum of £55, the good people will despatch to anyone a shiny new Atari 850 interface enabling complete compatibility with both devices.

### HISTORY LESSON

Atari introduced its 850 interface a few years ago in an attempt to counter the growing criticism that the 8-bit range was inadequate without standard interfaces, such as parallel and serial ports. It's one thing having the best small computer, but quite another if you can't connect it to the outside world.

Of course, Atari itself marketed own-brand printers and – in the States – modems, but although of reasonable quality, particularly some of the later devices, they never seemed to offer competitive value for money.

The 850 interface features a standard parallel-printer interface and an RS232 serial port. Using this interface, you can connect any parallel or serial printer and all modems.

You cannot however, use split baud rates as the 850 doesn't support this speed. You can contact Computer House on 01 731 1276.

Edmund Blake

## ➤ ARCHIMEDES

### HELP AT HAND

The Arc is without doubt one of the most complex micros around. The operating system has to cope with a multi-tasking environment as well as all the usual disk, screen and keyboard tasks.

Indeed, getting to know your Arc can be quite a daunting job. One thing to remember, though, is that the built-in help system is a very good adjunct to Acorn's manuals. It's only ever a few keystrokes away.

From the MOS you need only type HELP followed by a keyword to receive on-screen help with many areas of the machine. At the top level, typing HELP COMMANDS lists all the commands within RiscOS, the MOS, File Switching, BASIC etc.

You can take it down one level, though, by typing HELP and one of the listed commands. For example, under File Switching is listed the command CDIR, used to create a new directory. Typing HELP CDIR tells you about it and shows the correct syntax for the command. To print all available help, set up your printer and then type HELP .. – that's HELP followed by a space and two full stops.

The help system only covers the operating system ('star' commands). Typing HELP REPEAT to try for help on the BASIC keyword prompts the response 'No help found.'

### COLLEGE FONTS

Most people have noticed that Acorn uses a rather quaint system of naming

its scalable fonts, to give the lie to the typefaces they're based on. Each face is given the name of a Cambridge University college with the same initial letter.

Thus, Times becomes Trinity, Helvetica becomes Homerton and Courier becomes Corpus. Since the company is slowly working through the whole Adobe PostScript font set, I wonder what they'll use for Zapf Dingbats?

But, then, by the time they get through to Zed, I'm sure Acorn will be on to utilizing Cambridge professor's names instead: Zinnia Cognition from the Philosophy department might be of some help in this instance...

### ARM3 VERSUS FPU

The ARM3 upgrade from Aleph One has proved popular – if more than a mite expensive. The alternative is Acorn's floating point unit (FPU). Priced at £688.85, this half-width module will only fit 400 series Arcs, and then only in an Acorn-specified slot.

The FPU doesn't use a custom-chip to pair it to the ARM processor, but instead draws on an off-the-shelf chip, the WE32206. This is not directly compatible with the ARM processor, so Acorn have had to marry it to a protocol convertor chip of its own design.

Even with the extra processor overhead this must involve, the chip is claimed to offer up to eight times the throughput on certain maths-intensive tasks. In practice, though, these tasks will be few and far between – they're mainly reserved for languages like C.

### AND SPEAKING OF DISKS

Disks of the computer kind, that is. Owners of Maverick 2 – a disk utility for the C64 and any of the Commodore-produced disk drives that are normally used with it – might like to upgrade to Maverick Version 3.

I'm sure FSSL – those good people who produce the thing – would like very much to hear from you. Indeed, for more utilities and general disk-based 'goodies' than you can shake a stick at, or for Maverick 3 on its own at a cost of £24.95, you can contact FSSL at Masons Ryde, Defford Road, Pershore, Worcs, WR10 1AZ.

### BY ANY OTHER NAME

A joystick is still a joystick. Indeed, there must be hundreds of joysticks available for the C64, but one I saw recently seemed reasonable enough to mention to you.

The device is produced by Euromax and is called the Professional 9000 Deluxe. Indeed it was the advert that caught my eye, because it extolled the features of this new wonder joystick, and in particular its 'top fire button and dial-a-speed rapid fire'. Whatever that might be!

### THE FOOD OF LOVE?

Datel Electronics (old friend of ours who lives at Fenton Industrial Estate, Govan

Road, Fenton, Stoke-on-Trent, has now got a very nice musical offer going.

The Datel MIDI 64 interface, and the software package called Advanced Music System (does everything, including print out your musical masterpieces), plus the Yamaha SH10 MIDI Synthesiser (it looks a bit like a guitar but is definitely all keyboard), are all available at £99.99.

### WILL YOU STILL LOVE ME?

Issue 65 of Express arrives, with the Commodore 64 still going strong. In 1982, as the editor of Commodore Computing International, I was given the opportunity to review one of the first C64s in the country.

However, what we got was an American 64, meaning that it wouldn't run on our televisions, and the only suitable monitor we could get was a silent black and white one. I had to write 3000 words about...!

### POKE POKE THAT 64

Three for the Action Replay fanatics and anyone else who can restart a game without needing a SYS location. On *Pulse Warrior*, you POKE 9316,240 for infinite lives. On *Netherworld*, you could POKE 12116,44 to achieve the same result, but on *Dark Side* you'll need two pokes to achieve infinite time: POKE 26272,173 and POKE 29005,173.

BASIC uses its own floating point routines and is unaffected by the FPU.

It all comes as a bit of a disappointment for the home Arc owner. In my estimation this device might well be aimed at the top of the range R140 machine, which is designed to run Unix anyway, and will, therefore, have as many C programs to speed up as anyone could ever want. Indeed, if you happen to have over £600 to spend on your Arc, you'd be well advised to go for the ARM3 upgrade instead.

### BASIC GRIPE

I wonder if anyone else is as frustrated as I am by BASIC's insistence on upper case characters for keywords. I don't mind this per se, in fact, I strongly approve of listings displayed in mixed case – it aids readability.

What I object to is having to put the capitals in myself. Most modern BASICs can recognise their own keywords and automatically capitalise them as you enter each line. Indeed, many automatically indent listings to show control loops, too. This keeps the program readable, without worrying the programmer about it.

### KEEP IT COMING

I'm always interested in news of any kind for the Arc. Send your contribution in to me at the Archimedes column, New Computer Express, Beauford Court, 30 Monmouth Street Bath BA1 2AP.

Bertrum Carrot



# Ladbroke Computing International

"The Country's leading 16 Bit Specialist"



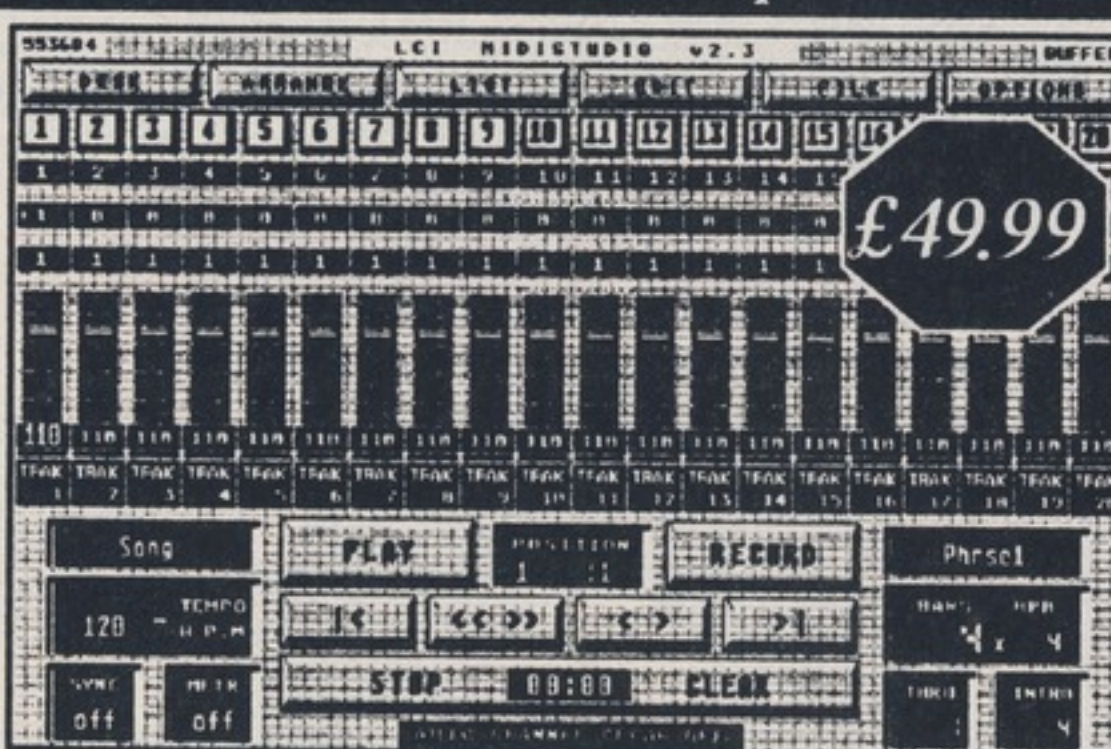
33 Ormskirk Rd, Preston, Lancs, PR1 2QP  
Open Mon. to Sat. 9:00 am to 5:00pm  
Dealer enquiries welcome.

**Phone us for best prices. We will try to match any price.**

This company has given years of full support to computer users from their premises at 33 Ormskirk Road Preston. Now from their Mail Order premises they can offer this "second to none" service to users countrywide. All Software/Hardware is ex-stock and fully tested prior to purchase to ensure that returned goods are now a thing of the past. All hardware is supported by our on site engineers so that quick turn around on all repairs is guaranteed. There are no hidden extras WYSIWYG. All prices include VAT, and delivery on orders over £100 (Mainland UK, courier delivery + £5). All prices are correct at time of going to press and are subject to change without prior notice. Phone for latest prices, advice. We are always happy to help.

## Midistudio 20 track ST Midi sequencer

Midistudio is an attractively priced, 20 track Midi Sequencing package. It can record up to 682 bars per phrase (pattern) on up to 100 phrases. Any phrase can be placed on any track. Tracks can be soloed and muted and tracks and phrases can be named. Program numbers can be displayed in a variety of ways including 0-127, 1-128, in banks from a11-b88 or a01-b64. The Desk features sliders to set relative volumes on each track and you can even do a mix on the fly. Midistudio also has a clock to display the length of the last playback. Step time note edit functions are available including copy, split, merge, append, and transpose, velocity editing (including a humanize function), full controller editing and different levels of quantizing. Midistudio works in medium and hi res and a demonstration disk is available for just £3.99.



## IMG scanner Scan at up to 1000 Dpi

The IMG scanner is a realistic, low cost scanner which can offer high quality graphics digitising for a tenth of the cost of other scanners. This simple unit plugs into the cartridge port of the ST and accepts scanned information via optical cables which fix easily to the head of any Epson compatible dot matrix printer. The software allows grey scales to be replaced with colours, 4 in medium resolution and 16 in low resolution and offers scanning resolutions of 75, 150, 216, 300, 360 and 1000 dots per inch horizontally. Best results are achieved with photocopies. Greater than screen resolution images are saved in IMG file format and can be edited with any compatible art package. Screen resolution images can be saved in Raw data, Degas or Neochrome formats and edited with compatible art packages.

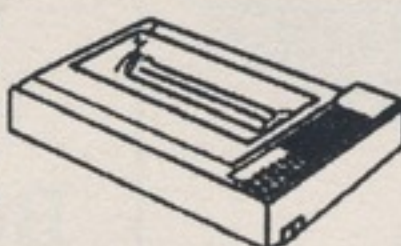


## Midistudio Master. 30+ new features £129.99

## Low resolution demonstration disk £3.99

### Best Selling Printers

Star LC-10.	140/36cps	£ 159.99 *
Star LC-10 Mk II.	180/45cps	£ 189.99 *
Star LC-10 Colour.	7 colour	£ 199.99 *
Citizen 120D.	120cps	£ 134.99 *
Star LC-24/10.	170/57cps	£ 239.99 *
Citizen Swift.	24 pin	£ phone



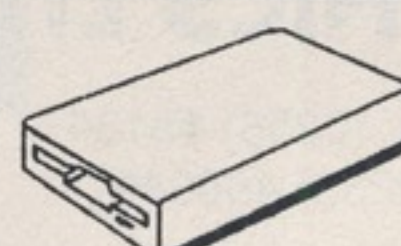
### Star Professional Series Printers

Star FR-10.	9 pin, 300cps draft, 76cps NLQ.	£ 399.99 *
Star FR-15.	15" carriage version.	£ 514.99 *
Star XB-24/10.	24 pin, 80 cps SLQ, LQ.	£ 514.99 *
Star XB-24/15.	15" carriage version.	£ 699.99 *
Colour upgrade for Star XB & FR range.		£ 39.99 *
Star Laser Printer 8, 1 Mb RAM.		£ 1599.99 *
Star Laser Printer 8DB, Double bin version.		£ 2399.99 *
Atari SLM804 Laser with 90 days on site warranty.		£ 1129.99

\* All these printers carry a 12 months on site maintenance warranty and come complete with cable. On site warranty UK mainland only. All printers are top quality products for the UK, not cheap imports.

### ST & Amiga Disk Drives

Cumana 1 Mb slimline.	(ST)	£89.99
Ladbroke's 1Mb.	(ST)	£74.99
Cumana 1Mb, internal.	(ST)	£74.99
Please note, ST's case requires modification for this internal drive.		
A/B boot switch, fitted.	(ST)	£24.99
Cumana 1Mb slimline, disable switch, through port.	(Amiga)	£74.99
Ladbroke's 1Mb, disable switch, through port.	(Amiga)	£69.99



### ST & Amiga Hard Drives

Megafile 30	(ST)	£499.99
Megafile 60	(ST)	£614.99
Supra 30Mb	(ST)	£474.99
Third Coast 65Mb	(ST)	£599.99
Third Coast 65Mb	(Amiga)	£659.99
Vortex 40Mb	(ST & Amiga)	£499.99



### Ladbroke Computing Hard drives

We have a range of high quality ST hard drives at affordable prices. All have the following minimum specification. Full metal case (same size as Mega ST), 60 watt PSU and room for a second mechanism. The low power, controller is full SCSI and can support up to 8 drives. The software includes Autopark, Autoboot from any partition, partition size up to 1 Gigabyte, any number of partitions, 100% AHDI 3.2 compatible driver and write protect any partition.

40HD 42Mb formatted, 11Ms, 64K on board cache.	£ 549.99
50HD 48Mb formatted, 30Ms average access time.	£ 499.99
85HD 83Mb formatted, 28Ms average access time.	£ 699.99
180HD 180Mb formatted, 20Ms average access time.	£ 1299.99

### Monitors & Peripherals

Atari SM124 Mono	£109.99 *	Joysticks from	£ 4.99
Atari SC1224 Colour	£284.99 *	Portfolio add-on's from	£ 39.99
Philips 8833 Colour	£249.99 *	Trak ball (ST / Amiga)	£ 19.99
Philips 8802 Colour	£239.99 *	Mouse mats from	£ 5.99
Philips 15" FST, remote, Scart		Mouse/joystick extension	£ 5.99
input, Tv with 60 tuner presets,		Amiga modulator	£ 19.99
timer and teletext.	£259.99	Hawk scanner	£ 1249.99
* Deduct £10 if bought with computer, Scart cable included			

### Repair Centre & Upgrades Ex - stock

512K STFM RAM Upgrade fitted.	£ 84.99 *	512K STFM RAM upgrade, kit.	£ 59.99 *
512K STM RAM Upgrade, fitted.	£ 84.99 *	512K unpopulated ST board, fitted.	£ 49.99
512K populated ST board, fitted.	£ 119.99	512K populated ST board, kit.	£ 109.99
2Mb populated ST board, fitted.	£ 299.99	2Mb populated ST board, kit.	£ 249.99
2Mb unpopulated ST board, fitted.	£ 59.99	4Mb populated ST board, fitted.	£ 499.99
STFM Blitter chip, fitted.	£ 49.99 *	STFM Blitter chip, kit.	£ 49.99 *
512K unpopulated Amiga board	£ 19.99	512K populated Amiga board	£ 69.99
512K unpopulated Amiga board+clock	£ 29.99	512K populated Amiga board+clock	£ 79.99

\* Please check configuration before ordering. Our Atari trained engineers can repair all hardware, including Amigas, in minimum time at competitive prices. Fitting prices quoted for machines not previously tampered with. All upgrades and repairs carry our 3 months parts and labour guarantee.

### Networking & Mac Emulation

- Network up to 32 ST's.
- Up to 500 Ft between ST's.
- 31K Baud data transfer rate.
- Full data correction.
- File locking.
- Networking permissions.
- Allows upto 12 hard/RAM disk partitions.
- Turn your ST into a Mac Plus.
- Reads and writes to Mac disks.
- Supports 99% of all packages.
- Supports Hard drive and second floppy drive.
- Compatible with STE.
- 30% bigger screen area than Mac Plus.
- 128K ROM's in stock.

► SGSnet Starter kit	£ 149.95
► SGSnet add-on kit	£ 99.95

► Spectre GCR	£ 299.99
► With 128K ROM's	£ 399.99

### Entertainment packs

520 STE Explorer	£284.99
520 STE Power pack	£374.99
1040 STE Hyper pack	£464.99
Amiga Class of 90's	£549.99
Amiga Batman pack	£369.99
Amiga Batman + pack	£399.99

Explorer pack includes a game, Metacomco Basic and tutorial disk.  
Power pack consists of Organiser software, First Basic, First music and games including, Afterburner, R-Type, Gauntlet II, Super hangon, Space harrier, Mousetrap, Buggy boy, Super huey, Eliminator, Nebulus, Pacmania, Predator, Bombjack, Bombuzal, Xenon, Double dragon, Blacklamp, Outrun, Stargoose, Starray.

Hyper pack includes Hyper Paint art package, Hyper draw vector drawing package, Borodino strategy game and Metacomco Basic.

Batman + pack includes A500 Batman pack, mouse mat, joystick and the Tenstar games pack with Photon paint.

### Quality 3.5" Disks

Quantity	Unbranded		Sony Branded
	Loose	Boxed	Boxed
10	£6.99	£7.99	£9.99
100	£64.99	£74.99	£89.99

All disks are Sony, Maxcell or Kao and carry an unconditional lifetime guarantee. Please add 60p P&P for each pack of ten disks.

### Connectors & Dustcovers

ST Centronics lead	£9.99	Monitor covers from	£4.99
Atari Monitor lead	£5.99	LC-10 printer cover	£7.99
Pair of Midi leads	£7.99	Hard drive cover	£4.99
Amiga Scart with sound	£14.99	ST cover	£3.99
Null Modem cable	£10.99	Amiga A500 cover	£3.99
8 bit Printer interface	£29.99	Mega 2 cover	£7.99
Atari DMA cable	£15.99	Disk drive cover	£2.99

Disk boxes from £4.99. Phone for care kits.

### Business & DTP Systems

Mega ST1 + SM124	£ 614.99
Mega ST2 + SM124	£ phone
Mega ST4 + SM124	£ 1229.99
Portfolio (pocket PC)	£ 229.99
Atari PC4 (80286)	£ 1383.99
Atari PC5 (80386)	£ 2121.99
DTP Mega 2 pack	£ phone
DTP Mega 4 pack	£ 2049.99
A4 Flat bed scanner	£ 449.99

This high quality 200dpi flat bed scanner is also a thermal printer and photocopier. It can scan high resolution images in up to 16 grey scales. ST or Amiga software allows capture, printing, load & save of images in a number of formats. This is probably the most cost effective piece of office equipment you could own. Cable included.



(0772) 203166

Fax 561071

Ladbroke Computing International is a trading name of Walton Marketing Limited. Copy date 24/01/90

To assist us in processing your order please quote this code.

SST2.7



## BUILD IT YOURSELF!

### MOTHERBOARDS

#### XT TURBO

12MHz, V20, 0k, 8 slots. Small size, takes 256k x 4 DIL.

**£62.10 + £4.50 p&p**

#### AT TURBO

12MHz, 0k, up to 4 M on board. Seven slots, takes 256k x 1, or 256k x 4, or 1M x 1.

**£158.00 + £4.50 p&p**

#### AT TURBO PLUS

12MHz, up to 4M on board. Eight slots, takes 256k x 4 or SIPS. EMS fitted.

**£188.00 + £4.50 p&p**

### STARTER SYSTEMS

Both include a full 1 Mbyte of RAM, 101/102 key keyboard, a 12" mono monitor, Hercules graphics, DR-DOS and a parallel port. Both run at 12MHz clock speed and have eight slots.

**AT mini-tower £749**  
**XT system £459**

Delivery included

### CASES

#### XT/AT CASE

Space for three 5.25" floppy/hard disk drives and one 3.5" drive.

**£44.50 (+ £6 p&p)**  
**180W PSU £44.85 + £3**

#### DE-LUXE CASE

Same disk space but prettier! Speed display.

**£65.00 (+ £6 p&p)**

#### MINI TOWER CASE

AS DE-LUXE case but desk-top tower style.

**£72.50 (+ £6 p&p)**

### PC-DIY BOOK

If you are not sure how to go about building your own PC, this book is for you. 112 pages full of DIY tips for £7.95 including postage.

**VAT is INCLUDED in all our prices. Why not telephone or write for our FREE catalogue?**

### DISPLAY ADAPTORS

#### UNIVERSAL VGA

This board auto-switches between 8 and 16 bit, drives mono, EGA and VGA monitors, (in native mode) and supports all standard VGA modes. Easy upgrade to extended VGA to give 1024 by 768.

**£137.00 (+ £2 p&p)**

#### DUAL CGA/HERC

Auto-switch, plus port for printer.

**£38.00 (+ £2 p&p)**  
**102 keyboard £46 + £5**

### I/O ADAPTORS

#### RS232 short card

**£16.10 (+ £2 p&p)**

#### AT SERIAL/GAME/ PARALLEL CARD

Sockets for serial 2

**£11.50 (+ £2 p&p)**

#### FLOPPY CONTROLLER

for XT or AT, 360, 720, 1.2, 1.44. Two drives 3.5" or 5.25".

**£24 (£2 p&p)**

## BLACKMORE ELECTRONICS LTD

4 THE PLOCKS  
BLANDFORD FORUM  
DORSET DT11 7AA

Telephone: (0258) 451347  
Fax: (0258) 456046

ACCESS AND AMERICAN EXPRESS ACCEPTED BY POST, TELEPHONE OR FAX

## THE AFFORDABLE SOLUTIONS

### Amstrad PPC 640S with Integral modem

+

### 20MB Internal Hard Disk

Amstrad is the trademark of Amstrad Plc.

### HARD DISK FEATURES

- Totally Internal
- Fast access time
- Lightweight
- Rugged
- Autopark
- Very quiet

**ONLY £948**

(ex. VAT)

Price includes delivery UK Mainland

Internal hard disk Upgrade for PPC 512/640. 20MB  
£449.00 - Excluding VAT 40MB £599.00 - Excluding VAT.

**NEW**

### EXPANSION BOX FOR PPC (SLOT BOX)

#### FEATURES:

- \*FOUR FULL SIZE SLOTS
- \*ADDITIONAL SPACE FOR:  
2 X 5 1/4" devices  
2 X 3 1/2" devices

**ONLY £199**

A stand alone unit incorporating a unique temperature-controlled cooling fan. Unit also powers PPC. Output: 75W



For Further Information

**RING: 01-390-2588**

Fax: 01-390-7144

**ALFA**

### ELECTRONICS LTD

MAPLE HOUSE  
97 EWELL ROAD  
SURBITON  
SURREY KT6 6AH

OR

Contact your  
local Amstrad  
Business Dealer

## PD & SHAREWARE

who do you get yours from?



There are many PD libraries around but do they offer you....

- ★ Huge collection, thousands of programs on over 3000 disks
- ★ Same day service - 1st Class post - GUARANTEED
- ★ Knowledgeable staff on hand (no 'phone after six and ask for fred!)
- ★ Three years experience collecting and distributing PD & Shareware to satisfied customers all over the world.
- ★ FREE 30 page catalogue, S.A.E (28p stamp) and state MAKE of computer CLEARLY and we'll rush one to you by return.

## AMIGA

Currently over 800 disks in our catalogue, including Fred Fish, APDC, AMICUS, PanoramA etc. Our own SOF collection is so good other libraries stock them now and of course we are exclusive distributors of the fabulous UGA disks. All are auto-boot, menu driven and so very easy to use, probably the best collection available! We also run an Amiga Club, ask for details.

## ATARI ST

We currently stock over 800 disks full of PD/Shareware for these machines, containing every imaginable type of program! Choose from ALL the Public Domain, not just "a selection". If you are new to ST'ing why not join "Clubville", our popular user group, £6.50 gets you newsheets, offers, special prices on goods, 5% Off blanks/PD etc.

## IBM PC

(and compatibles)

Thousands of the most popular Public domain and Shareware programs in our current catalogue, all available on either 3.5" or 5.25" format, if ordering (opposite) state which. Whatever type of program you may require, we've probably got it.

### MEGA PACK - £19.50 (£14.50)

5 PD disks + 5 blank disks

plus a Library case

(Selection of current popular titles),  
**INTRO DISK - £1.50**

(Atari or Amiga only)

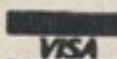
**VIRUS KILLER DISK - £1.50**

(state machine clearly)

(prices in brackets for 5.25" disks, state preference)

24 Hour orderline on

**0705-266509**



## SOFTVILLE

Unit 5, Stratfield Park  
Electra Avenue, Waterlooville,  
Hants. PO7 7XN.

## B.C.S LTD

### 3 1/2 DISKS

	25	50	100	200	400
880K	£17	£30	£55	£102	£195
2MB	£32	£60	£118	£220	£400

### 5 1/4 DISKS

	25	50	100	200	400
DS/DD	£8.50	£15.50	£28	£52	£100
DS/HD	£19	£35	£66	£126	£247

### DISKS CERTIFIED 100% ERROR FREE

### DISK BOXES

3.5 CAPACITY	5 1/4 CAPACITY
10 .....£2.50	10 .....£2.50
50 .....£4.50	50 .....£5.50
100 .....£6.75	100 .....£6.75

Add £2 P&P if not ordered with disks

### ACCESSORIES

Quickshot Joystick .....	£5.55
Navigator Joystick .....	£13.95
Speedking Joystick .....	£11.25
Black Cruiser Joystick .....	£9.45
Sureshot Joystick .....	£14.10
Foam mouse pad .....	£3.30

### AMIGA

A500 Modulator + mouse .....	£355
A500 Batman Pack .....	£358
<b>A500 Class of the 90's .....</b>	<b>£504</b>
A500 Air Miles Pack .....	£405
A500 Dragons Lair Pack .....	£449
<b>A501 512Kb Ram Exp Pack .....</b>	<b>£99</b>
3 1/2 External Drive .....	£60
40Mb Hard Disk .....	£499
HI Res colour monitor .....	£249

Add £6 for next day delivery

### ATARI

Explorer Pack .....	£266
Power Pack .....	£349
Ultimate Pack .....	£429
Ultimate Pack + mono monitor .....	£524
Atari printer .....	£100
Additional mouse .....	£24
Portfolio .....	£222
Mono monitor .....	£135
<b>720K disk drive with PSU .....</b>	<b>£69</b>

Add £6 for next day delivery

### GAMES GAMES GAMES PHONE FOR LOW PRICES

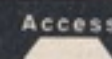
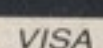
**ALL UK STOCK**

**SAME DAY DESPATCH  
NO QUIBBLE GUARANTEE**

**PRICES INCLUDE  
VAT + CARRIAGE**

**CHEQUES TO: B.C.S LTD,  
349 DITCHLING ROAD, BRIGHTON,  
EAST SUSSEX BN1 6JJ**

**PHONE: (0273) 506269 24 HRS**





# BEST

- Bargains
- Advice
- Prices
- Offers
- Jobs

# SHOPPING EXPRESS

The *weekly* computer market place for people *serious* about buying

• THIS WEEK'S BUYERS' GUIDE

# TOP

# WORD PROCESSORS

● The best text handling software for your machine

## JOB SHOPPING?

Check out our recruitment section inside

## ALSO INSIDE

- **Take** advantage of our latest mail order offers.
- **Benefit** from our reliable buyers' guides. No waffle, just facts.
- **Gain** more than £10 off mail order prices by using Express vouchers.
- **Score** on the free reader adverts. Sell your products for *absolutely no charge!*

Save your cash,  
save your time

## SAVE MONEY

Use these  
Express Vouchers  
with the ads  
inside ►

Full details overleaf

EXPRESS  
VOUCHER

50p

EXPRESS  
VOUCHER

£3

EXPRESS  
VOUCHER

£1

EXPRESS  
VOUCHER

£6



# DOLAN ELECTRONICS LIMITED

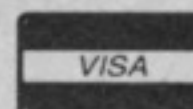
Dolan House, Johnstown,  
Carmarthen, Dyfed  
SA31 3RB

SALES: 0267 2344 44

FAX: 0267 231863



all prices ex VAT & Delivery  
CWO or COD available



specifications subject to change

## £399!

### 12MHz XT

- ★ 640Kb RAM expandable to 1Mb on board
- ★ 12MHz CPU switchable to 4.77MHz
- ★ 102 Key Keyboard
- ★ 360 Kb 5 1/4" Floppy Drive
- ★ 2 Serial Ports
- ★ 2 Parallel Ports
- ★ Real Time Clock/Calendar
- ★ 5 Free Expansion Slots
- ★ Hercules Graphics Card & High Res Mono Monitor
- ★ DOS vers. 4.01 & Basic
- ★ DOS tutorial, utilities + menu software free

Single Drive 12" Green Mono System £399  
40Mb 30Ms 12" Green Mono System .....£599  
14" Flat Screen Paper White Mono .....add...£35  
14" EGA Colour Monitor .....add...£226  
720Kb 3 1/2" Floppy Drive .....add...£65  
640 Mb to 1Mb RAM Upgrade .....add...£45

## £795!

### 16MHz 386-SX

- ★ 1Mb RAM expandable to 8Mb on board
- ★ 16MHz CPU switchable to 6MHz
- ★ 102 Key Keyboard
- ★ 1.2Mb 5 1/4" & 1.44Mb 3 1/2" FLOPPY DRIVES
- ★ 2 Serial Ports
- ★ 2 Parallel Ports
- ★ Real Time Clock/Calendar
- ★ 5 Free Expansion Slots
- ★ Super VGA Card w/256 Kb RAM High Res Mono Monitor
- ★ DOS vers. 4.01 & Basic
- ★ DOS tutorial, utilities + menu software free

Dual Drive Mono System as above .....£795  
20Mb 40Ms Mono System .....£995  
45Mb 25Ms Mono System w/32Kb Cache .....£1145  
14" VGA Colour Monitor .....add...£200  
14" Super VGA Colour Monitor .....add...£350

## EXPRESS VOUCHERS - How the scheme works

● The Express voucher scheme is a unique way of enabling you to save money when you buy goods by mail order.

● It offers you a discount of up to 5% off the prices printed in many advertisements in this magazine – and remember, many of these

prices are already much lower than in the shops.

● The vouchers are not limited to specific items - you can save on any purchase from one of the participating advertisers.

● Most of our advertisers are

taking part in this scheme – just look for this sign.

● Remember. By using this scheme you will almost *always* be able to buy goods cheaper from New Computer Express than anywhere else.

#### £1 voucher. Valid for orders above £20

This voucher may be used as £1.00 part payment on any order totalling over £20 from a participating advertiser in New Computer Express. You simply fill in the details below and send it off with your order.

NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
TEL. \_\_\_\_\_

ITEM PURCHASED \_\_\_\_\_

One voucher per order only. Voucher and order must reach the advertiser before **9am Monday 19 February 1990**

#### £6 voucher. Valid for orders over £120

This voucher may be used as £6.00 part payment on any order totalling over £120 from a participating advertiser in New Computer Express. You simply fill in the details below and send it off with your order.

NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
TEL. \_\_\_\_\_

ITEM PURCHASED \_\_\_\_\_

One voucher per order only. Voucher and order must reach advertiser before **9am Monday 19 February 1990**

#### 50p voucher. Valid for orders over £10

This voucher may be used as 50p part payment on any order totalling over £10 from a participating advertiser in New Computer Express. You simply fill in the details below and send it off with your order.

NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
TEL. \_\_\_\_\_

ITEM PURCHASED \_\_\_\_\_

One voucher per order only. Voucher and order must reach the advertiser before **9am Monday 19 February 1990**

#### £3 voucher. Valid for orders over £60

This voucher may be used as £3.00 part payment on any order totalling over £60 from a participating advertiser in New Computer Express. You simply fill in the details below and send it off with your order.

NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
TEL. \_\_\_\_\_

ITEM PURCHASED \_\_\_\_\_

One voucher per order only. Voucher and order must reach the advertiser before **9am Monday 19 February 1990**

### THE FIVE SIMPLE RULES

1. Express vouchers can be used to obtain discounts on purchases of goods advertised in this issue of *New Computer Express*, **provided** that they are bought directly from an advertiser taking part in the scheme. The vouchers are valid only for those advertisements which say "We accept Express vouchers".

2. Each voucher entitles you to a discount at the voucher's face value, **provided** that your overall order level is **higher** than the figure indicated on the back of the voucher.

3. To use a voucher, simply enclose it with your discounted payment when you order. You may use **only one** voucher in any one order.

4. The order including the voucher must be received by the advertiser before the closing date printed on the voucher.

5. You must fill in the details on the voucher.



# THE SHOPPING EXPRESS GUIDE TO THE TOP WORD PROCESSORS

The most vital piece of computer software for most serious users is the word processor – many use their micro for nothing else. Here is Express' verdict on the best you can find for every machine

Probably the most important 'serious' use of your micro is word processing. Anything from a letter to a novel is better prepared on a micro than on a typewriter: editing is easier, and you can keep making those final adjustments right up to when you decide to print.

All word processors allow you to create, edit and print simple documents, and all word processors allow you to store documents on disk or tape for retrieval at a later date. All let you move, copy or delete blocks of text, and use a variety of type styles. And you can set up different layouts – change margins and tab settings in a document and so on. Many packages allow you to write 'macros' where you give a series of commands which can subsequently be enacted with a single command or keystroke (for example, copying all the chapters of your book from one disk to another for backup just by the one command DO BACKUP or suchlike). Fine for letters or doing the odd bit of writing.

Expensive word processors have extras like spell checking facilities, word counters, the ability to display bold or italic or different type size effects on screen ('what you see is what you get' or WYSIWYG) and/or mail merge (where you can send letters to each name in a list with each person's details automatically included at the top of the letter). 'Serious' use – for writing or business – will demand a program like this.

Really advanced programs let you include graphics in a document, work on several documents at once each in a separate 'window' on screen, automatically generate footnotes and indexes and bibliographies and so on. This is for the professional – the large-scale business user, academic or writer.

Here's the Express guide to the best word processors for each machine. A brief description and the highlights and drawbacks of each are included. In 'Value for Money' five stars is the maximum.

## PC

### ● PROTEXT V4

£100 • Arnor • 0733 68909

For sheer text and file handling Protext stands out. It's fast, flexible and full of features; good spell checker and mail

merge facilities so powerful you can write program-like text and file handling routines. A must for writers and journo.

- ▲ Fast
- ▲ Spell checker
- ▲ Powerful mail merger
- ▲ Powerful macros
- ▲ Loads of extras – calculator, word counter etc
- ▲ Two file editing

- ▼ No real graphics capability
- ▼ Not good at handling complex layouts

VALUE FOR MONEY ★★★★★

### ● TASWORD

£50 • Tasman Software • 0532 438301

Superb value and fast. A few odd limitations but an excellent basic word processor. *TasSpell*, the spell checker, also available, along with *TasRes*, the memory resident version of the processor.

- ▲ Memory resident and fast
- ▲ Easy to customise
- ▲ DOS shell macros
- ▲ Word count, notepad features etc

- ▼ Clumsy text insertion
- ▼ Some limitations – find and replace won't accept spaces, blocks must be whole lines etc

VALUE FOR MONEY ★★★★★

### ● CELEBRITY

£80 • Software Paradise • 0222 887521

A well designed word processor with a lot of extras and plenty of appeal for the first time user. It doesn't show the compromises usual with beginner's packages.

- ▲ Good clear command structure
- ▲ Calculator, calendar, DOS manager etc
- ▲ Thesaurus and spell checker
- ▲ Up to four text windows

- ▼ Thesaurus US and a bit slow
- ▼ Window dimensions fixed

VALUE FOR MONEY ★★★★★

### ● MULTIWRITER 2

£115 • NewStar Software • 0245 265017

A very powerful package that includes many features usually found only on really expensive word processors. *WordStar* dot commands can be included directly in a document so this may be ideal for *WordStar* diehards. Lots of extras – author's utilities and a filing program, for example.

- ▲ *WordStar* compatible
- ▲ Good menu and context sensitive help
- ▲ Extras: contents and index generator etc
- ▲ Filer utility

- ▼ Filer awkward to use

VALUE FOR MONEY ★★★★★

### ● BORLAND SPRINT

£199.95 • Borland • 0734 320022

A hugely powerful word processor – certainly worth looking at if you need the complete works. Breathtakingly fast with an autosave feature that means even if the power goes your document has been saved exactly as it was at that moment. Comes with front ends that make it look like *WordStar*, *WordPerfect*, *MultiMate* or *Microsoft Word* if you're used to those packages. A bit complicated to use though and modelled on C, which doesn't help.

- ▲ User interfaces for *WordStar* etc
- ▲ Thesaurus and check-as-you-type spell checker
- ▲ Cross-referencing
- ▲ Very powerful indexing facilities
- ▲ Laser and PostScript support

- ▼ Very complex to use – only get it if you really need all the power
- ▼ Still a few little bugettes

VALUE FOR MONEY ★★★★★

### ● MICROSOFT WORD

£395 • Microsoft • 0734 500741

Another of the heavyweights. Packed with every feature you can imagine, but you're paying for it. Easy and intuitive to use for such a high-powered package – ideas outliners, contents/indexing and

footnotes, very good graphics facilities – and of course it runs under windows and OS/2.

- ▲ All the heavyweight features: thesaurus, spell checker, author utilities
- ▲ Ideas outliner
- ▲ Good graphics import facilities
- ▲ Runs with windows and OS/2
- ▲ Easy to use

- ▼ Very pricey
- ▼ Need a powerful machine – slow unless you have a 286 or 386

### ● WORD PERFECT 5.1

£425 • Sentinel • 0932 231164

The biggest selling word processor on the PCs, and the *de facto* standard in academia. A huge program with everything you could ever need: thesaurus, spell checker, two column text, footnote and index generation, automatic date insertion, end notes, mathematical symbols etc etc etc. New version has mouse option. Frankly though a disappointment for the huge price; only any use if you're already committed to the program because of training – or if you can get it on expenses.

- ▲ Everything you could ever need in a word processor
- ▲ Exemplary manual
- ▲ Available on minis, mainframes as well as micros
- ▲ Good discounts for educational users (but still expensive)

- ▼ Vastly expensive
- ▼ Some very complex keystrokes for functions – must be learned by rote

VALUE FOR MONEY ★★★

### ● CHIWRITER

£92 • Shareware Marketing • 0297 24088

The word processor for scientists. Originally a shareware product, this word processor lets you design and use predesigned fonts for scientific use. Can cope with any mathematical symbols – even the most complex integrals for example. The most impressive WYSIWYG you'll ever see! If all you want is a word





## DATAPEX

10 Petersfield Avenue, Slough,

Berkshire SL2 5DN

Tel: 0753 35557

All prices excluding VAT and delivery



### AMIGA HARDWARE

Amiga 500 + TV modulator £299

Amiga 500 + Batman Pack &amp; 5 games, joystick £345.00

**NEW BATMAN PACK £299** while stocks last!

#### New from Amiga

Includes: TV modulator, 3.5" Disk Drive with Amiga DOS Kickstart, Workbench and Batman The Movie game, F18 Inceptor, Paint 2, New Zealand Story.

### AMIGA ACCESSORIES

**Amiga Class of the 90's.....£449**
**Inc. database, spreadsheet, WP, music, art & design, logo and BBC emulator.**

Amiga A501 RAM pack + Clock.....£99

Amiga joystick.....£10

TV Modulator.....£15

Phillips CM8833 colour monitor.....£199

Phillips BM7502 12" green monitor.....£79

Phillips BM7522 12" amber monitor.....£89

Amiga To Philips cable.....£8

**Amiga RAM Upgrade.....£99**
**2 Meg RAM Upgrade, plus in board with on/off switch.**

#### AMIGA DRIVE

1 Meg 3.5" external.....£68

1 Meg 3.5" internal.....£63

1 Meg 5.25" external.....£99

### ATARI COMPUTERS

520 STE Power Pack.....£325

520 STE (Includes: Hype Draw, Hype Paint, ..... Borodino)

520 STFM Explorer Pack.....£248

520 STFM Super Pack.....£329

520 STFM Power Pack.....£322

1040 STFM Super Pack.....£399

1040 STE.....£389

1040 STE Power Pack.....£469

SM124 mono monitor.....£110

SC1224 colour monitor.....£229

#### ATARI DRIVES

1 Meg 3.5 external.....£68

1 Meg 5.25 external.....£99

1 Meg 3.5 internal.....£63

### STAR PRINTERS

Star LC10 mono.....£135

Star LC10 II mono.....£165

Star LC10 colour.....£168

Star 2410.....£225

Star LC15 9 Pin 136 column.....£264

Star LC2415 24 Pin.....£328

### PANASONIC

**Unbeatable Prices!**

Panasonic 1081.....£125

KXP 1124.....£219

KXP 1180.....£144

### CITIZEN PRINTERS

Citizen 120D.....£115

Citizen 180E.....£127

Swift 24.....£255

Colour upgrade for Swift.....£42

### MANNESMAN TALLY

Mannesman MT 81 Dot Matrix.....£115

Mannesman Sheetfeeder.....£62

Mannesman Serial Interface.....£49

**REPAIRS FOR AMIGA AND ATARI**

processor that can handle the odd bit of maths, have a look at LocoScript PC before you decide between the two.

- ▲ Handles any maths – integrals, complex set theory symbols etc
- ▲ Does foreign characters too
- ▲ Footnotes and font designer

▼ Limited as a word processor: no mail merge, word count only after spell check

▼ Only one document at once

▼ Hidden extra costs for hi-res or screen

**VALUE FOR MONEY ★★★**

### ● TOPCOPY PLUS

£109 • Innova Software • 0453 835379

Big brother of *Topcopy* – a very powerful and well-featured word processor. Verging on the 'big league'. Very fast – memory resident – and keeps everything reformatted as you go. Multi document handling together with the speed of operation makes it ideal for people who shunt text around a lot. good spell check and mail merge too.

- ▲ Memory resident
- ▲ Can import text from defined areas of underlying screens
- ▲ Auto reformats but still fast
- ▲ Three files on screen at once, handles up to six documents
- ▲ Spell checker and mail merge
- ▲ Very fast

▼ One or two useful commands missed or difficult to find

▼ No auto backup of files

**VALUE FOR MONEY ★★★★★**

### ● GALAXY

£42 • Shareware Marketing • 0297 24088

A shareware word processor that resembles WordStar. Doesn't compete with ones you pay a hundred quid for, but for the price you get a program ideal for occasional use.

- ▲ Menus
- ▲ Spell checker
- ▲ Very reasonable price

▼ Restricted power – best for occasional user

## ST

### ● 1ST WORD PLUS

£79.95 • Electric Distribution • 0480 496789

The big brother of *1st Word*, the program that comes with the ST, this handles graphics and can even capture screens directly in Degas format. Lots of good features, but the keystroke sequences can be a bit tedious.

- ▲ Reads Degas, Neochrome and Doodle format pics
- ▲ Spell checker
- ▲ Mail merger
- ▲ Multi column printing
- ▲ Fast and efficient
- ▲ Good display

▼ Keystroke sequences get tedious

▼ Have to save files before printing

▼ No index on manual!

**VALUE FOR MONEY ★★★★★**

### ● WORD WRITER

£79.95 • Electric Distribution • 0480 496789

This is a great little WYSIWYG word processor without graphics facility but excellent text handling – spell checker, mail merger, thesaurus. Good shortcuts which you can make up yourself. Outliner included to help you structure your writing. Only grumble is with its layouts – having more than one in a document is very awkward.

▲ Spell checker, mail merger and thesaurus

▲ Excellent shortcuts – delight to use

▲ Outliner included to help you structure your work

▲ Good use of mouse

▼ Layouts restricted

**VALUE FOR MONEY ★★★★★**

### ● PROTEXT

£99.95 • Arnor • 0733 68909

For sheer text and file handling *Protext* stands out. It is fast, flexible and full of features; it has a good spell checker and mail merge facilities so powerful you can write program-like text and file handling routines. For writers and journalists this is a must. Although odd on the ST as it doesn't use GEM, *Protext* is really a powerful keyboard-driven text editor.

- ▲ Fast
- ▲ Spell checker
- ▲ Powerful mail merger
- ▲ Powerful macros
- ▲ Loads of extras – calculator, word counter, memory editor etcetera
- ▲ Two file editing

▼ Restricted WYSIWYG

▼ Ignores GEM totally

▼ Command driven – no menus

**VALUE FOR MONEY ★★★★★**

### ● THAT'S WRITE

£129 • Cavendish • 01-323 4761

A powerful, non-GEM word processor that offers many features not found on many other programs. Produces great printed results and this machine is excellent for the 'printout-oriented' user. Font designer, facility to grab screens, WYSIWYG, automatic index and contents generation, hyphen control etc. included.

▲ Excellent printed results, good layout control

▲ Contents and index generation

▲ Good font use – font editor too

▲ Powerful macro system

▼ Manual dodgy

▼ No spell check/ mail merge/ graphics

▼ Funny screen fonts

**VALUE FOR MONEY ★★★★★**

### ● WORDUP

£59.95 • HB Marketing • 0895 444433

This is almost a DTP package with some excellent features like graphic import, automatic text flow round graphics, lots of different type sizes and styles. Great for producing fancy and



BEST PRICES 0903 700714 BEST PRICES 0903 700714 BEST PRICES 0903 700714 BEST PRICES 0903 700714 BEST PRICES 0903 700714

**"Well done" "Amazing prices" "Very quick delivery" - Mr T.N-S. Bucks**



**\* 1 YEAR ON SITE WARRANTY FREE \***

**INC VAT AND DELIVERY**

## Swift 24



- \* 1 Year On Site Warranty FREE \***

**NEW! £314.95 NEW!**  
INC VAT AND DELIVERY

**NEW PRICE! £134.95**  
including VAT and delivery



**ALL GAMES IN STOCK NOW!!!**

**\*\*\* SPECIAL OFFER \*\*\***  
**PRODIGY - only £99.95**

## STE & ACCESSORIES

- |                                   |                |
|-----------------------------------|----------------|
| <b>SM124 Mono Monitor</b>         | <b>£99.99</b>  |
| <b>Megafile 30 Hard Disk</b>      | <b>£429.95</b> |
| <b>Megafile 60 Hard Disk</b>      | <b>£595.00</b> |
| <b>Trak Ball (Mouse/Joystick)</b> | <b>£24.95</b>  |
| <b>Robo Kit * <i>NEW</i> *</b>    | <b>£99.99</b>  |
| <b>STE Stereo Scart Lead</b>      |                |
| <b>In Stock! * <i>NEW</i> *</b>   | <b>£12.99</b>  |

Portfolio Pocket PC	£229.95
Smart Parallel Interface	£38.95
Smart Parallel Interface - with parallel cable	£41.95
32K Memory Card	£46.95
64K Memory Card	£81.95
128K Memory Card	£118.95
Serial RS-232 Interface	£56.95
Super Memory Expander - (expands to 640K)	£164.95
Portfolio Card Drive	£64.95

<b>Stacy 2: 2Mb Ram, 20Mb Hard Disk</b>	<b>£1369.99</b>
<b>Stacy 4: 4Mb Ram, 40Mb Hard Disk</b>	<b>£1889.99</b>
Stacy prices include <i>RED STAR</i> delivery	



- |                                     |               |
|-------------------------------------|---------------|
| <b>LC24/10 Cut Sh Feeder</b>        | <b>£59.95</b> |
| <b>Genuine Star LC10 Ribbons...</b> |               |
| <b>5 x Black Ribbons</b>            | <b>£16.95</b> |
| <b>10 x Black Ribbons</b>           | <b>£32.95</b> |
| <b>5 x Colour Ribbons</b>           | <b>£24.95</b> |
| <b>10 x Colour Ribbons</b>          | <b>£47.95</b> |

only  
**£57.95**  
inclusive

### GFA Basic 3 Interpreter

**with  
12 Months On  
Site Warranty  
FREE!  
and VAT and  
Delivery**

**ADD £5.00 INC VAT FOR ALL ORDERS OVER £100.00 INC VAT**  
**ADD £7.50 INC VAT FOR ALL ORDERS UNDER £100.00 INC VAT**





## A.D.S MAIL ORDER

78 Marsh Lane, Mill Hill,  
London. NW7 4NX  
Tel: 01 - 906 - 3572

PHONE LINES MANNED  
TILL 10PM EVERY DAY  
INC. SUNDAYS

C64C Light  
Fantastic Pack  
£147.00

A500  
Bat Pack  
£360.00

A500 Class Of  
The 90's Pack  
£505.00

Amiga Bat Pack + Software Pack + Joystick  
Five explosive games and a joystick all for  
**£385.00** STOCK CLEARANCE - EVERYTHING  
MUST GO ONLY WHILE STOCKS LAST

Commodore 1084 Monitor - .....£249.00  
Philips CM8833 Monitor - .....£245.00

Star LC10 Mono Printer .....£160.00  
Star LC10 Colour .....£205.00  
Star LC24-10 Printer .....£235.00  
Seikosha SP180AL Printer .....£160.00  
(Sheet Feeders & other accessories available)

Any Amiga Packs  
can be made up at  
the Best Prices

**ATARI**  
520 ST Power Pack  
£340.00  
520 ST Explorer Pack  
£265.00  
ST Mega 1 Business  
Pack  
£510.00

If you do not see what you require  
then please phone us on our 24HR  
Credit Card Hotline. We will try to  
Beat Any Prices Quoted Anywhere  
Else. Prices include V.A.T. and  
Courier. Any software listed  
Elsewhere is available from us at  
THE BEST PRICES! A.D.S - Dealers in  
Computers, Telephone Systems, Fax  
Machines and Mobile Communications.  
We sell everything that is computer  
related. If you are looking for  
anything, leave a message as to  
what it is and how much you would  
expect to pay! We will aim to find it.

## FIRST CHOICE COMPUTERS

Unit 8, Armley Park Court,  
Stanningley Road, Leeds LS12 2AE.  
Tel: LEEDS 0532 637988

### COMPUTERS

Atari 520 STE Explorer .....279.00  
Atari 520 STE Powerpack .....359.00  
Atari 1040 STE .....429.00  
Atari 1040 STE Powerpack.....P.O.A.  
Amiga Batpack .....369.00  
Amiga Batpack + Tenstar .....389.00

### MONITORS includes leads

Philips CM8833 Col. 14" .....249.00  
Commodore 1084 P Col. 14" .....219.00  
Commodore 1084 D Col. 14" .....229.00

### PRINTERS includes leads

Atari SM124 High Res. 12" M .....119.00  
Star LC10 Mono 9 pin .....159.00  
Star LC10 Colour 9 pin .....209.00  
NEC Pin Writer P2+ .....299.00  
Citizen Swift 24 pin .....219.00  
(with colour option £34.99 extra)

### EXTERNAL DISK DRIVES

Cumana 3.5 1 MEG Atari ST .....89.00  
Power drive 3.5 1 Meg Atari ST .....84.99  
Cumana 3.5 1 MEG Amiga .....84.99  
Senator 3.5 1 MEG Amiga .....79.00

### JOY STICKS

Powerplay Cruiser .....9.50  
Powerplay Cruiser Clear .....11.95

### OTHER ACCESSORIES

Mouse Mats .....4.50  
Dust Covers FROM .....4.50  
Printer Cables .....5.90  
ST to SCART .....9.95  
Universal Printer Stand .....6.99

### DISKS

Sony Unbranded 3.5 DS/DD  
ONLY £6.90 for 10  
£31.90 for 50  
£59.90 for 100  
Sony 3.5 DS/DD Branded  
ONLY £11.95 for 10  
THREE M 5.25 DS/DD  
ONLY £6.95 for 10  
THREE M 5.25 DD/DD  
ONLY £11.95 for 10

### DISK STORAGE

Datafile 3.5 80 Disk Capacity, with  
lock ONLY .....£6.90  
Datafile 40 Capacity .....£5.49  
5.25" Disk Box 40 Capacity ONLY .....£6.90

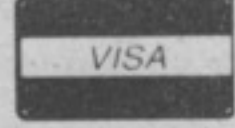
### SOFTWARE

Most ST & Amiga Games. Less 20%  
Discount. Business & Utilities all at  
discount prices.  
Photon Paint II (Amiga) .....£39.00

All Prices include  
VAT & Delivery

Call into our showroom or order by telephone for fast delivery

Open 9am-5.30pm Mon-Sat.  
Open Thursdays late till 8pm  
Open Sunday 10am-3pm



Tel: LEEDS 0532 637988

Fax: 0532 637689

impressive looking documents.

- ▲ Good choice of fonts
- ▲ Lots of control over style
- ▲ Graphics import
- ▲ Auto text flow around all the graphics
- ▲ Mail merger

- ▼ Can only print Wordup's fonts
- ▼ Best with a laser or a 24 pin printer
- ▼ No spell checker

VALUE FOR MONEY ★★★

## AMIGA

### ● PROTEXT

£99.95 • Arnor • 0733 68909  
For sheer text and file handling Protext is the best Amiga text processor. It's fast, flexible and full of features; good spell checker and mail merge facilities so powerful you can write program-like text and file handling routines. For writers and journos this is a must. Odd on the Amiga as it doesn't use windows - it's really a powerful keyboard-driven text editor.

- ▲ Fast
- ▲ Spell checker
- ▲ Powerful mail merger
- ▲ Powerful macros
- ▲ Loads of extras - calculator, word counter, memory editor etc
- ▲ Two file editing

- ▼ Restricted WYSIWYG
- ▼ No windows
- ▼ Command driven - no menus

VALUE FOR MONEY ★★★★★

### ● KIND WORDS 2

£49.95 • Amiga Centre Scotland • 031-557 4242

A good value budget word processor with spell checker and import of graphics. New version has thesaurus and British dictionary. New fonts and a few extra features included too.

- ▲ Good standard word processor
- ▲ Spell checker
- ▲ Mail merger
- ▲ Graphic import

- ▼ Best for occasional user - no sophisticated layouts etc

VALUE FOR MONEY ★★★★★

### ● EXCELLENCE

£154 • Micro Systems (US) • 0101 407 7900770

Does everything WordPerfect does and more (see PC section) - checks your spelling as you type, imports graphics, checks your grammar and offers suggested improvements. For the really serious writer.

- ▲ Graphics import
- ▲ Spell checking as you type
- ▲ Mail merging
- ▲ Grammar checker
- ▲ Contents/ index/ footnote generation
- ▲ And everything else

- ▼ Expensive - can you get what you need cheaper?

VALUE FOR MONEY ★★★★★

## PCW

### ● LOCOSCRIPT 2

£25 • Locomotive • 0306 740606  
If you like LocoScript 1 (which 8256 and 8512 owners get free) you'll love LocoScript 2 (which 9512 owners get free). Faster than version 1 (but still slow) it can jump to a specified page instead of scrolling through, supports Cyrillic, Greek and mathematical symbols, works with any printer in the world, lets you design up to 16 characters yourself, and offers a range of add-on fonts for the printer. There's even a database add-on available separately, LocoFile.

- ▲ Faster than version 1
- ▲ Unrivalled printer support
- ▲ Can make 16 design characters
- ▲ Greek, Cyrillic, maths symbols
- ▲ Extra fonts available
- ▲ Database available

- ▼ No word counter
- ▼ Still very slow
- ▼ Can't exchange printer codes

VALUE FOR MONEY ★★★★★

### ● PROTEXT

£59.95 • Arnor • 0733 68909

For sheer text and file handling Protext beats everything else on the PCW hands down. Fast, flexible and full of features; good spell checker and mail merge facilities so powerful you can write program-like text and file handling routines. For writers and journos this is a must. The word counter is invaluable and block moves are so fast you'll wonder how you ever survived on LocoScript.

- ▲ Breathtakingly fast
- ▲ Spell checker
- ▲ Powerful mail merger
- ▲ Powerful macros
- ▲ Loads of extras - calculator, word counter, two column printing etc
- ▲ Two file editing
- ▲ Vital if you use any CP/M programs (database/spreadsheet etc)

- ▼ Not good at handling complex layouts

VALUE FOR MONEY ★★★★★

### ● MINI OFFICE

£30 • Database • 0625 878888

A five-in-one package, the word processing module doesn't quite rival LocoScript or Protext, but is nevertheless a full-featured and useful program. And you get a database, spreadsheet, comms and graphics module as well. Whatever you do don't buy the more expensive Mini Office Professional Plus, which boasts a spell checker and thesaurus: they're both very disappointing.

- ▲ Fast, full-featured word processor
- ▲ Very fast word counter
- ▲ Exotic features - auto Roman page numbering, reversed out printing, double height characters
- ▲ Mail merge
- ▲ Database, spreadsheet, graphics and comms utilities included

- ▼ No accents or foreign characters
- ▼ No phrase facility
- ▼ Curiously flimsy feel
- ▼ No interchange of data between spreadsheet and word processor

VALUE FOR MONEY ★★★★★



MAIL ORDER DEPT-TRADING HOURS  
Mon-Fri 9.00am to 1.00pm (Lunch  
2.00pm to 5.00pm (1 - 2)  
Saturday:- CLOSED

# COMPUTERS SADDLER COMMUNICATIONS

Telephones: Ashton-in-Makerfield  
(0942) 720867 and 711821  
Facsimile:- (0942) 271226

SADDLER COMPUTER SERVICES LTD, 340 HAYDOCK LANE, HAYDOCK, ST HELENS, LANCASHIRE WA11 9UY.

## PERSONAL COMPUTER CENTRE of the NORTH WEST

### AMSTRAD CENTRE

### COMPUTERS

### ATARI 'ST' RANGE

COMPUTERS	MONO	COLOUR	ENH.COLOUR
1512-SD	394	482	
1512-DD	481	562	
1640-SD	488	589	688
1640-DD	557	659	758
1640-HD(30)	751	852	949
2000 RANGE	12"VGA-MONO	14"COL	12"HRC
2086-SD	589	684	779
2086-DD	659	752	852
2086-HD 30M	854	944	1045
2286-DD	872	956	1049
2286-HD(40)	1053	1137	1230
2386-HD(65)	1754	1838	1931

MITAC	TTL MONO	VGA MONO	CGA COLOUR	VGA COLOUR
1000 P 720K	638	-	799	-
1000 P 20MB	899	-	1042	-
1000L 720K	-	669	-	899
1000L 20MB	-	915	-	1145
MPC21400-40	-	1436	-	1668
MPS 2386	-	1495	-	1728
MPS 2386-40	-	1999	-	2318
MPC 2386	-	1495	-	1728
MPC 2386-40	-	1899	-	2135
MPC 238-120	-	2255	-	2485

520 ST 'EXPLORER' P.ACK	239
520 ST 'POWER' PACK	299
ATARI 1040 STFM COMPUTER	375
1040 STFM + MONO MON	449
1040 STFM + COLOUR MON	525
ATARI 2MB MEGA ST	667
ATARI 4MB MEGA ST	899
ATARI 12" HR MONO MON	113
ATARI 14" HR COL.MON	299
ATARI MEGAFILE 30MB HD	379
ATARI MEGAFILE 60MB HD	527
ATARI SLM804 LASER PRINTER	995

#### PORTABLES.

PPC 512S	376
PPC 512D	485
PPC 640S	457
PPC 640D	578

#### WORD PROCESSORS

8256	339
8512	429
9512	463

FREE MOTOROLA 9500X CELLPHONE

ALL THE ABOVE PRICES INCLUDE  
12 MONTHS ON SITE MAINTENANCE

#### DISC DRIVES

FD4 2nd DRIVE FOR WORD PROC.	115
FD7 3.5" 1.4m Int (FOR 2286)	139
FD9 3.5" 1.4m Ext. DRIVE	149
FD10 5.25" 360K Ext. Drv.	139
FD11 5.25" 1.2MB Ext. 2286/2386.	149

#### VGA

MONITORS	
12" Mono	115
14" Colr.	199
12" HRC	292
14" HRC	379

#### SOFTWARE

WORDSTAR	76
SUPER CALC 3.21	77
ACCOUNTS MASTER	115
PAY MASTER	38
INFOMASTER	55
DbASE III	76

#### PRINTERS

DMP 3160	109
DMP 3250 DI	112
DMP 4000	149
LQ 3500 Di	189
LQ 5000 Di	299

AMSTRAD FX 9600T FAX ONLY £525.

#### THIS FORTNIGHTS SPECIAL OFFER SINCLAIR 'PROFESSIONAL SERIES' COMPUTER

PC200 COMPUTER	265	PC200 3.5"MB E/DD.	134
PC200 MONO MON.	79	PC200 5.25" EXT.DD	134
PC200 COLR.MON	158	PC200 JOYSTICK	18
PC200 PRINTER	89	IDEAL STARTER SYSTEM	

#### SAMSUNG COMPUTERS

SPC3000V/1 - SD	459
SPC3000V/2 - DD	538
SPC3000V/3 - HD20	765
MFC 6000/1 - SD/1.2	923
SPC 6500/1 - SD	923
SPC 6500/2 - DD	1154
SPC 6500/3 - HD40	1299
S800 1x5.25"/1x3.5"	1925

#### ACORN A3000

A3000 + PHILLIPS CM8833	788
A3000 BASE	569
A3000 COLR.MON.	189
A300 MON.STAND	26
A3000 SERIAL UPGRADE	17
A3000 USER PORT/MIDI	44
A3000/MB.RAM	175

#### SAMSUNG MONITORS

MA2571 12" W/P MONO	76
MA2573 12" GREEN	69
MA2575 12" AMBER	76
MA4571 14" WHITE	84
MA4573 14" GREEN	76
MA4575 14" AMBER	93
OQ4551 14" EGA	269
VGA ADAPTOR CARD	198

#### AMIGA A500

A500 BATPACK	318
A500 CLASS OF THE 90s	459
C1084D 14" COL MON	237
A500 3.5" HARD DRIVE	68
A501 1 MEG.RAM.	117
A520 MODULATOR	19
A590 20MB HRD DRV	314
MINIGEN GENLOCK	83

#### ORGANISERS

ATARI PORT FOLIO	194
PSION XP 32K RAM	85
PSION LZ 32K 4 LINE	107
PSION LZ 64K	136
PSION MAINS ADAPTOR	9.46
PSION ADAPTOR/AT	9.46
PSION ADAPTOR/PRINTER	9.46
PSION COMMS LINK RS232	43.84
PSION DATAPAK 32K	25.00
PSION SPELLING OXFORD	21.98

#### ALL PRICES EXCLUDE VAT & CARRIAGE

E & O E ALL PRICES AND  
MANUFACTURERS  
SPECIFICATION SUBJECT  
TO CHANGE WITHOUT  
NOTICE

FULL RANGE OF  
SOFTWARE PRINTERS  
ACCESSORIES  
AVAILABLE. RING  
FOR DETAILS

#### DELIVERY UK MAINLAND

HARDWARE:- 4 WORKING DAYS £7 PER BOX NEXT DAY £12 PER BOX  
SOFTWARE:- 4 WORKING DAYS £4 PER BOX NEXT DAY £8 PER BOX  
PAYMENT: BY CHEQUE - GOODS DISPATCHED WHEN CHEQUE CLEARED  
EXPRESS CLEARANCE CHARGE  
OR PHONE US WITH YOUR ACCESS/VISA DETAILS

THE PEOPLE  
TO DO  
BUSINESS  
WITH

SHOP TRADING HOURS:- MONDAY 2.00PM to 5.00PM TUES. to FRI. 9.00 AM - 1.00 PM (LUNCH 1 - 2) 2.00 PM to 5.00 PM. SATURDAY 9.00 AM to 4.30PM.



**C & M MICROS**

**HOME & BUSINESS COMPUTER SUPPLIES**  
**DON'T BUY DISKS OFFERING ANYTHING LESS!**

**LIFETIME REPLACEMENT GUARANTEE, 100% ERROR FREE.**  
**COMPLETE WITH MULTI-COLOUR LABELS, TABS (5 1/4") AND PROTECTIVE SLEEVES.**



3 1/2" unbranded disks manufactured by SONY  
 5 1/4" unbranded disks manufactured by SENTINEL



Bulk Disks	10	25	50	100	150	200	300	500
3 1/2" DS/DD (135)	£7.50	£18	£34	£66	£96	£124	£180	£290
5 1/4" DS/QD (96/48)	£4	£9	£16	£30	£43	£56	£80	£130
3" DS (Maxell)	£23	£57	£112	£219	£327			

Phone for prices

**BRANDED DISKS MANUFACTURED BY THE SONY CORPORATION OF JAPAN**

Sony Brand	1+	3+	5+	10+
3 1/2" DS/DD (135) Boxes	£12.00	£11.50	£11.00	£10.50
5 1/4" DS/QD (96/48) of 10	£11.00	£10.50	£10.00	£9.50

**STRONG DISK BOXES. LOCKABLE WITH 2 KEYS, DIVIDERS & RECESSED HANDLE. Add £1 P&P if not ordered with disks.**

3 1/2" 40 Capacity	£4.50	80 Capacity	£6.50
5 1/4" 60 Capacity	£4.50	100 Capacity	£6.50

★ **Special Offers** ★ Latest **COLOURS**™ disk packs. 10 Coloured 3 1/2" disks (2 of red, orange, yellow, green, fog-white) in a clear fronted flip-top case. Only £9.50

Amiga sys programmers guide	£31.30	Amiga C for beginners	£17.55
Atari ST machine language	£18.00	Atari ST BASIC to C	£14.20

ALL PRICES INCLUDE VAT, P&P FREE (UK ONLY). Orders below £15 in value carry a handling charge of £1. Please phone or write for a FREE price list.

**C & M MICROS, 25 MIDDLEFIELD ROAD, BESSACARR, DONCASTER, S. YORKS. DN4 7EB**

CARDNET CREDIT CARD HOTLINE (0302) 539955



## 512K EXPANSION FOR THE AMIGA A500

### £59.00

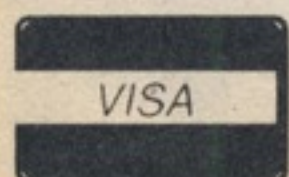
Inclusive of VAT and p&p  
 Only £66 with Real Time Clock

The Expansion board uses the latest 1M bit DRAMS to provide high reliability and a memory disable switch is included

**COMING SOON:  
 2 meg board**

★ SAME DAY DESPATCH

**Send cheques to:**  
**DS & K Designs Ltd**  
**Dept NCE, 66 Lime St,**  
**Liverpool L1 1JN**  
**051 709-4412**



### ● NEWWORD

£70 • NewStar Software • 0245 265017

Very like WordStar 4 but only ideal if you or those who will use the PCW were trained on that and can't manage anything else. Just possible some businesses would find it useful though not for the individual.

▲ Full featured word processor similar to WordStar

▲ Good at conditional merging, nesting and chaining of multiple documents and data files

▲ Very flexible and powerful

▼ Not as good as LocoScript or Protext

VALUE FOR MONEY ★★

### CPC

### ● PROTEXT

£19.95 tape, £26.95 disk, £39.95 ROM • Arnor • 0733 68909

For sheer text and file handling Protext stands out. It's fast, flexible and full of features; good spell checker and mail merge facilities so powerful you can write program-like text and file handling routines. Get the ROM version – it's a delight to use.

▲ Fast

▲ Spell checker

▲ Powerful mail merger

▲ Powerful macros

▲ Loads of extras – calculator, word counter etc

▲ Two file editing

▼ Maximum 22K file size on disk, 38K on ROM

▼ Not good at handling complex layouts

VALUE FOR MONEY ★★★★★

### ● MINI OFFICE

£14.95 tape, £19.95 disk • Database • 0625 878888

Not a full featured word processor but nevertheless a very useful program. It is fine for occasional use – letters, the odd essay or article and so on. You get a database, spreadsheet, comms module and graphics utility free but they don't work they work separately from the word processor.

▲ Good basic word processor

▲ Database, spreadsheet, graphics and comms utilities included

▼ No interchange of data possible between spreadsheet/ graphics/ word processor

▼ Not as powerful as Protext

VALUE FOR MONEY ★★★

### ● TASWORD

£19.95 tape, £24.95 disk • Tasman Software • 0532 438301

Special versions for 464, 464D (using disk drive) and 6128 which uses the extra memory to best effect. Latter pair include mail merger. Fairly easy to get to know and it has comprehensive help screens. Screen operations can be slow but can also be customised for greatest speed.

▲ Good printer control handling

▲ Easy to use  
 ▲ Simple mail merger  
 ▲ Good help screens

▼ Can be a bit slow

VALUE FOR MONEY ★★★★★

### ● BRUNWORD

£30 (6128 disk) £25 (464 disk) • Brunning Software • 0245 252854

Complete package: word processor, spell checker which loads into the extra memory, and card filing program. 40, 80 and 128 column modes and fast screen response. Easy to learn and good value – possibly this has the edge over Tasword as the best CPC wp after Protext.

▲ Fast screen response

▲ Spell checker with 30,000 dictionary included

▲ Card filer included

VALUE FOR MONEY ★★★★★

### C64

### ● EASY SCRIPT

£50 • mail order houses

Highly regarded word processor, but no longer in production; you'll have to try the mail order places. Get this if you can't get PaperClip

▲ Easy to use and well featured

▼ 40 column only

VALUE FOR MONEY ★★★★★

### ● PAPERCLIP

£50 • mail order houses

In many people's minds, the best of the 8-bit word processors around. Again, you'll have to phone round mail order places to get hold of one, but it'll be well worth it.

▲ Two documents open simultaneously in widows

▲ 40 or 80 column modes

▲ Spell checker

▲ Macros facility

▼ Difficult to find!

### SPECTRUM

### ● TASWORD

£13.90 48K, £19.95 Plus 2, £24.95 Plus 3 • Tasman Software • 0532 438301

Special versions exist for each machine. Easy to get to know and comprehensive help screens. Screen operations slow but can be customised for greatest speed. A versatile and well featured program. This is the only real word processing option for Speccy owners.

▲ Good printer control handling

▲ Easy to use

▲ Simple mail merger

▲ Good help screens

VALUE FOR MONEY ★★★★★

### BEEB

### ● WORDWISE PLUS

£56.35 • Computer Concepts • 0442 63933

One of the first word processors on the



*Always**Reasonable**Reliable**And**No Fuss***COMPUTERS****AMIGA A500 BATMAN PACK**

Includes Batman The Movie,  
New Zealand Story, F18  
Interceptor, Deluxe Paint II, TV  
Modulator

**RRP £399.00****OFFER PRICE .....£375.00****BATPACK + 10 STAR PACK****£395.00****BATPACK + A501 RAM UPGRADE****£459.00****A500 CLASS OF THE 90's PACK**

Complete Educational Package  
Extensive software,  
too much to list

Total Value - £1002.00

**RRP £573.00****Our Price £516.00 inc VAT****AS ABOVE + A501 RAM UPGRADE****£595.00****ATARI****ATARI 520 STE POWER PACK**

Includes 20 games, music  
software, business organizer,  
Hi-Soft basic

**RRP £399.00****OFFER PRICE .....£360.00****ATARI 520 STE  
EXPLORER PACK****RRP £299.00****OFFER PRICE .....£275.00****1040 STE + HYPERPACK****RRP £499.00****OFFER PRICE .....£449.00****MEGA 1 ST + MONO MONITOR****OFFER PRICE .....£599.00****MEGA 2 ST + MONO MONITOR****OFFER PRICE .....£899.00****AMSTRAD PCW****PCW 9512**

+ Daisywheel printer

Plus Free Auto Sheet Feeder

**RRP £573.00****OFFER PRICE .....£516.00****MONITORS****PHILIPS CM8833**

Colour Med-res

**RRP £299.00****OFFER PRICE .....£235.00**

Includes lead ST/Amiga  
Please state which

**DISK DRIVES****AMIGA**

1Meg 3.5" Slimline

daisychainable, disable switch

**OFFER PRICE .....£74.95****ATARI ST**

1 Meg 3.5" Slimline

Joystick Powered

**OFFER PRICE .....£69.95****OFFER PRICE with PSU ....£79.95****UPGRADES****A501**

1/2 Meg upgrade with clock card

**RRP £149.99****OFFER PRICE .....£110.00****1/2 Meg without clock .....£85.00****Inc 1 Meg Dungeon Master game.****PRINTERS****CITIZEN SWIFT 24 PIN DMP**

Draft 192, LQ60, Friction/  
tractor feed

**RRP £441.00****OFFER PRICE .....£299.00**

Price includes Amiga ST/PC lead,  
2 year warranty

**CITIZEN 180E 9 PIN DMP**

Draft 150 NLQ 36

**£165.00**

Including Amiga/ST/PC lead  
2 year warranty

**STAR LC10 9 PIN DMP**

Including Lead

**£169.00****STAR LC10 COLOUR PRINTER**

Including Lead

**£210.00**

- Credit card 24 hour facility
- Credit cards not debited until goods despatched
- Offered subject to availability and price change
- Same day despatch on stock items
- Amstrad authorized business dealer
- Ring for price lists
- Large selection of games on most formats
- Large selection of business software IBM/PC compatibles

**IBM/PC COMPATIBLE**

Amstrad Authorised Business Dealer

**AMSTRAD PC****PC 1512**

SD MONO .....	£442
DD MONO .....	£549
SD COLOUR .....	£569
DD COLOUR .....	£639

**PC 2086**

(Includes Lotus Symphony)

SD MONO .....	£649
DD MONO .....	£729
HD MONO .....	£935
SD COLOUR .....	£755
DD COLOUR .....	£835

12" HI-RES COLOUR

**SD £859 - DD £935 - HD £1,145**

14" HI-RES COLOUR

**SD £959 - DD £1,039 - HD £1,249****AMSTRAD PORTABLES**

PPC 512 .....D .....£429

PPC 512 .....DD .....£549

PPC 1640 .....D .....£549

PPC 1640 .....DD .....£629

**COMMODORE PC****PC10**

SD MONO .....	£568
DD MONO .....	£620
SD COLOUR .....	£723
DD COLOUR .....	£775
SD EGA COLOUR .....	£878
DD EGA COLOUR .....	£930

**PC10 FRAMEWORK MOUSE  
& MPS 1230 PRINTER**

MONO .....	£982
COLOUR .....	£1189
EGA COLOUR .....	£1344

**SCHNEIDER PC**

**SCHNEIDER APPROVED DEALER.**  
**TOWER AT SERIES**  
**SINGLE DRIVE 3.5"**

**RRP**      **OUR**  
**PRICE**

AT201 512K MM 12" .....	£918	£800
AT201 1Mb MM 12" .....	£1033	£910
AT201 512k CM 14" .....	£1148	£1034
AT201 1Mb EGA .....	£1321	£1169

**DOUBLE DRIVE 3.5"**

AT202 1Mb MM 12" .....	£1148	£1034
AT202 1Mb EGA .....	£1378	£1210

**20 MEG HD**

AT220 1Mb MM 12" .....	£1436	£1265
AT220 1Mb CM 14" .....	£1608	£1415
AT220 1Mb EGA .....	£1723	£1516

**60 MEG HD**

AT260 1Mb M/Sync .....	£2297	£1950
Including on site maintenance and Microsoft works integrated pack.		

**ATARI PC****PC3**

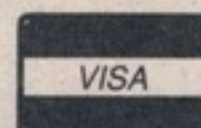
DD EGA MONO .....	£620
-------------------	------

**PC3 HD**

30 Meg HD EGA MONO .....	£826
--------------------------	------

**PC4 HD**

60 Meg HD EGA MONO .....	£1445
60 Meg HD VGA Colour .....	£1650

**A  
R  
R  
A  
N****A  
R  
R  
A  
N****A  
R  
R  
A  
N****A  
R  
R  
A  
N**

**STATE  
MAKE AND  
MODEL OF  
COMPUTER**

**WHY NOT  
CALL IN AND  
SEE US**

Mail Order Send Cheques/PO to:  
**ARRAN COMPUTERS**

17A LOWER HILLGATE, STOCKPORT

SK1 1JQ

TELEPHONE 061 480 3975

**PRICES INC. VAT****P&P FREE UK ONLY****OVERSEAS ADD £3.00****NEXT DAY COURIER ADD £5.00**



Beeb. Only works in 40 column (with an 80 column preview) but does everything very quickly and intuitively. Can slap print control codes in the middle of a document and hence control any printer if you're prepared to dirty your hands with the manual. Macros also can be set up. Also available on ROM.

- ▲ Fast and intuitive
- ▲ Flexible printer control
- ▲ Good macro facility
- ▲ Available on ROM

- ▼ Only 40 column
- ▼ Must be technical to use printers to fullest

VALUE FOR MONEY ★★★★★

## ● INTERWORD

£56.35 • Computer Concepts • 0442 63933

Part of a series of programs – *Interbase*, *InterSheet* etc – which work as an integrated suite. Available on ROM, 80 columns, spell checker etc. Easy to use and offers most facilities you'd find on a word processor of this price.

- ▲ Spell checker
- ▲ ROM version available
- ▲ Can link up with other Inter-product to form integrated suite
- ▲ Easy to use

VALUE FOR MONEY ★★★★★

## ● VIEW 3

£44.95 on ROM • Micro power • 0532 436300

A perfectly usable word processor. Works in 80 columns.

- ▲ Fast and on ROM
- ▲ Good usable word processor
- ▼ Limitation on length of document

VALUE FOR MONEY ★★★★★

## ARCHIE

### ● 1ST WORD PLUS

£79.95 +VAT • Acornsoft • 0223 245200

The Archie can use all the BBC word processors thanks to its built-in emulator, and, if you buy a PC emulator, those as well. (It would be best to go for a fast PC program such as *Tasword* or *Topcopy* resident in memory). There's not much choice among Archie word processors, but this port across from the ST version is a good fast and easy to use program. Spell checker included and works in graphics mode giving good graphics capabilities – you can import them into documents easily. Not restricted to a particular printer

- ▲ Fast and easy to use
- ▲ Good graphics capabilities
- ▲ Good spell checker
- ▲ Multi column printing
- ▲ Good display

- ▼ Keystroke sequences get tedious
- ▼ Have to save files before printing

VALUE FOR MONEY ★★★

## QL

### ● TEXT 87

£45 • Software 87 • 33 Savernake Rd, London NW3 2JU

Probably the best of the word processors you can buy – Quill comes free with the QL of course and is quite adequate for most basic uses. Fast, handles text in columns, has lots of fonts and displays most of them on screen.

- ▲ Good powerful word processor
- ▲ Multi column
- ▲ Much faster than Quill
- ▲ Good range of fonts

- ▼ A bit complex to use

VALUE FOR MONEY ★★★★★

## ATARI 8 BIT

### ● ATARIWRITER

£37.95 • mail order houses

Good disk-based word processor with

plenty of features. You'll have to phone round the places that sell Atari 8 bit software mail order.

- ▲ Spell checker
- ▲ Two column printing
- ▲ Two document editing
- ▲ Good block handling

### ● PAPERCLIP

£50 • mail order houses

In many people's minds, the best of the 8-bit word processors around. Again, you'll have to phone round mail order places to get hold of one, but it'll be well worth it.

- ▲ Two documents open simultaneously in windows

- ▲ 40 or 80 column modes
- ▲ Spell checker
- ▲ Macros facility

- ▼ Difficult to find!

# IN NEXT WEEK'S SHOPPING EXPRESS PC ESSENTIALS

## DISKS

3" CF2	Per 5.....£10.22
	Per 10.....£19.52
3.5" DS/135tpi	Per 10.....£11.26
	Per 25.....£23.43
5.25" DS/96tpi	Per 10.....£5.61
	Per 25.....£12.56

## DISK STORAGE - TOUGH LOCKABLE

Box for 3"	Holds 30.....£8.48
Box for 3.5"	Holds 30.....£8.48
Box for 5.25"	Holds 100.....£9.96

## RIBBON REFRESH

The unique fabric ribbon restorer 160ml can  
£7.78 + VAT

## RIBBONS FOR ALL MAKES OF PRINTERS

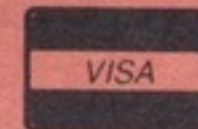
If yours is not listed - give us a call

	1 off	2 off	5 off
	£	£	£
Amstrad DMP 2000	F 3.44	6.48	14.74
Amstrad DMP 4000	F 5.17	9.52	19.96
Amstrad 3000	F 3.44	6.48	14.74
Amstrad 8256/8512 Std. Life	F 3.44	6.48	14.74
Amstrad 8256/8512 LongLife	F 4.30	7.78	17.35
Amstrad 8256/8512 F Colours:			
Red, Blue, Green, Brown	F 4.30	7.78	17.35
Amstrad 8256/8512	MS 3.44	6.48	14.74
Amstrad 9512 Std. Life	F 3.44	6.48	14.74
Amstrad 9512 LongLife	F 4.30	7.78	17.35
Amstrad 9512 Fbr Colours:			
Red, Blue, Green, Brown	F 4.30	7.78	17.35
Amstrad 9512	MS 3.44	6.48	14.74
Brother AX10, AX15	F 3.65	6.93	16.42
Brother HR15/25/35	F 3.57	6.78	16.06
Brother HR15/25/35	MS 4.03	7.66	18.13
Citizen 120D	F 3.44	6.48	14.74
Citizen Premier 35	MS 2.43	4.62	10.94
Citizen Premier 35	F 2.99	5.69	13.45
Citizen MSP10	F 4.14	7.87	18.63
Commodore MPS801	F 3.34	6.35	15.03
Diablo Hytype II	F 2.99	5.69	13.45
Diablo Hytype II	MS 2.43	4.62	10.94
Epson FX1000, 105	F 4.30	7.78	17.35
Epson MX/RX/FX100	F 4.30	7.78	17.35
Epson MX/RX, FX800, FX85 FX80	F 3.44	6.48	14.74
Epson LX80/LX86	F 2.47	4.70	11.11
Epson LQ1500	F 4.22	8.03	18.99
Epson LQ800	F 4.14	7.87	18.63
Epson LQ1000	F 4.38	8.32	19.71
Epson EX800/1000	F 5.17	9.52	19.96
Epson LQ2500	F 4.73	8.99	21.28
Hewlett Packard Deskjet Cartridge	12.80	24.30	59.96
Qume 1v Sprint 7/9	F 4.30	7.78	17.35
Qume 1v Sprint 7/9	MS 3.44	6.48	14.74
Seikosha FP800 LongLife	F 4.30	7.78	17.35
Star Radix 15	F 5.47	10.40	24.61
Star SD15	F 5.68	10.79	25.56
Star NX15	F 5.71	10.85	25.69
Star LC10	F 4.30	7.78	17.35
Star LC2410	F 3.50	6.65	15.75
Star NB15	F 6.37	12.10	28.66
Star NL10	F 5.11	9.70	22.99
Star SD10	F 4.81	9.15	21.64
Star NC10	F 4.30	7.78	17.35

MS = Multistrike, F = Fabric

# Dunning COMPUTER SERVICES

Dept NCE, 32 Granville Road, Bournemouth, Dorset. BH5 2AH



(0202) 431762

All prices include Carriage - just add V.A.T. @ 15%. Enquiries welcome on our Help Line. Cheques/P.O.'s with order please. Or phone Credit Card Hotline

## PRINTER STANDS

UNIVERSAL TO FIT ANY PRINTER	£8.65
WIRE STAND TO FIT ALL 80 COL	£9.60

## MONITOR SCREEN FILTERS

12" Mono	£11.85
14" Mono	£12.95
12" Colour	£14.35
14" Colour	£15.65

## CONTINUOUS STATIONERY

	Forms/Box	Price/Box
		£
<b>11 x 9.5</b>		
1 Part 60GSM (M)	2000	15.60
1 Part 70GSM (M)	2000	16.81
1 Part 80GSM (M)	2000	18.38
1 Part 90GSM (M)	1000	12.55
2 Part NCR	1000	20.13
3 Part NCR	700	23.12
4 Part NCR	500	23.19
2 Part NCR TINT	1000	24.36
<b>11.66 x 9.25 (A4)</b>		
1 Part 60GSM (M)	2000	18.78
1 Part 70GSM (M)	2000	18.84
1 Part 80GSM (M)	2000	22.27
1 Part 90GSM (M)	1000	14.64
2 Part NCR 80/57	1000	30.90
<b>11 x 14.5</b>		
1 Part 60GSM	2000	19.13
1 Part 70GSM	2000	20.81
2 Part OTC	1000	21.16
2 Part NCR	1000	25.34

\* = Plain or Music Ruled P = Plain only (M) = Micro perfs all edges  
TINT = Coloured Paper 2 Part - White/Pink 3 Part - White/Yellow/Pink 4 Part - White/Yellow/Green/Pink

## DRIVE CLEANERS

For 3" Head	£3.43
For 3 1/2" Head	£2.90
For 5 1/4" Head	£2.56

## MOUSE PADS

Quality A4 Size Soft Pad	£4.30
--------------------------	-------

## COMPUTER LABELS

Top Quality Avery Brand  
FREE Tape Dispenser/Cutter worth £4.99 + VAT with every 10000 labels!

	2000	5000	10000
	£	£	£
<b>1 ACROSS</b>			
2 3/4 x 15/16	6.96	14.48	25.52
2 3/4 x 1 7/16	8.48	18.04	32.13
3 1/2 x 15/16	7.39	15.52	27.43
3 1/2 x 1 7/16	9.52	21.70	36.83
3 1/2 x 1 15/16	12.96	28.57	51.78
4 x 15/16	7.78	16.61	29.52
4 x 1 7/16	9.96	21.43	38.52
4 x 1 15/16	13.09	28.83	52.13
<b>2 ACROSS</b>			
2 3/4 x 15/16	6.39	13.17	23.04
2 3/4 x 1 7/16	7.61	15.96	28.30
3 1/2 x 15/16	7.13	14.87	26.17
3 1/2 x 1 7/16	9.52	21.70	36.83
3 1/2 x 1 15/16	12.96	28.57	51.78
4 x 15/16	8.04	17.00	30.22
4 x 1 7/16	9.96	21.43	38.52
4 x 1 15/16	12.78	28.09	51.26
<b>3 ACROSS</b>			
2 3/4 x 15/16	6.23	12.85	22.32
2 3/4 x 1 7/16	7.51	15.76	27.80
3 1/2 x 15/16	6.36	15.90	28.10
3 1/2 x 1 7/16	8.48	18.04	32.13
3 1/2 x 1 15/16	11.46	24.63	44.52
4 x 15/16	7.13	14.87	26.17
4 x 1 7/16	9.66	20.83	37.52
4 x 1 15/16	12.68	27.89	50.76



SALE ON • SALE ON • SALE ON • SALE ON • SALE ON • SALE ON

## GASTEINER

INTERNATIONAL ORDERS  
24 HR SERVICE  
RING LONDON 884 2415

## COMPUTERS

Atari 520STFM .....	£269
Atari 1040STFM .....	£399
Atari Mega 1 .....	£519
Atari Mega 2 .....	£POA
Atari Mega 4 .....	£POA
Atari 1040STF .....	£POA

## MONITORS

SM124 (Atari) .....	£99
SM1224 (Atari) .....	£259
Philips 8833 .....	£POA
Philips 8852 .....	£259

## COMPUTER PACKS

Atari Power Pack .....	£349
Atari 1040 PRO .....	£439
Atari PC Pack .....	£499

## DRIVES

AVAILABLE FROM  
GASTEINER  
TECHNOLOGIES  
AND ALL GOOD STORES

GAS 40Mb 11 milliseconds .....	£599
GAS 50Mb 28 milliseconds .....	£479
GAS 85Mb 28 milliseconds .....	£679

Autoboot, Auto Park, 12 months  
guarantee, 12 partitions full SCSI  
DATA in and out. Back up program.

Supra 30Mb .....	£POA
Atari 30Mb .....	£389
3.5" 1Mb .....	£85
5.25" .....	£POA

## PRINTERS

Epson LX400 .....	£POA
Epson LQ400 .....	£POA
Epson LQ550 .....	£POA
Citizen 1086 .....	£POA
Citizen Swift 24 .....	£285
NEC P7+ .....	£POA
NEC P6+ .....	£POA
Star LC10 .....	£POA
Star LC10 Colour .....	£POA
Star LC24-10 .....	£POA
Panasonic KXP1180 .....	£POA
Panasonic KXP1124 .....	£POA

## LASER

Atari SLM804 .....	£POA
Star LP8 .....	£1249
HP Laser II .....	£POA
HP Laser IID .....	£POA
Panasonic Laser .....	£POA

## ACCESSORIES

Sony, TDK, Philips 3.5" DS/DD Box of 10 .....	£10
Kempston Data Scan .....	£229
Mouse .....	£24.95
Vidi ST .....	£95
Midi Lead .....	£POA
Twin Joystick Extension .....	£POA
Mouse Mat .....	£5
Ribbons .....	£POA
Internal Clock .....	£POA
External Clock .....	£POA
Dust Covers .....	£POA
Toners .....	£POA
A-Magic Turbo Digitiser .....	£POA
Printer Cable .....	£6

UPGRADE FOR ATARI COMPUTERS  
UP TO 4MB £99  
Available from Gasteiner and all  
good storesWorlds  
BestMS-DOS ON THE ST WITH THAT'S PC SPEED -  
THE HARDWARE PC EMULATORSupports monochrome as well as colour monitors.  
Supports all hard disks and disk drives connected to the serial  
and parallel port of your ST. Mouse supporting, IBM monochrome, CGA, Olivetti and Hercules  
graphic emulation. Extensive test available in ST magazineLatest version  
1.3 supports Atari  
mouse extended Ram  
facility up to 2.9 meg

## The Ultimate Challenge.. PC compatibility for ATARI ST owners

1. PC SPEED is small but powerful measuring only 9.5 x 9.5 cm
2. PC SPEED is fast and compatible
3. PC SPEED does not require the ROM port therefore leaving it free to be used by other valuable programs
4. PC SPEED can be built into any ST including the 520
5. PC SPEED is easy to work with
6. PC SPEED runs MS-DOS software fast and bug free
7. PC SPEED supports all hard disks that rely on the DMA port and it also uses ATARI hard disk driver
8. PC SPEED supports all external 3.5 and 5.25 drives
9. PC SPEED supports the parallel and serial ports, can even use PCmouse
10. PC SPEED supports all sound capabilities
11. NORTON factor 4.0 (four times faster than 4.77 MHz XT)
12. PC SPEED provides the user with 704K ram (64K more than an XT)
13. PC SPEED emulates CGA and Hercules graphic cards
14. The processor in PC SPEED gains direct access to the RAM via the systembus, therefore requires no RAM and thereby does not lose speed, the known problem when accessing the ram via the serial port.

OFFICIAL DISTRIBUTORS FOR THE  
"THAT'S SERIES" OF PROGRAMSEXCLUSIVE TO GASTEINER: SCSI host adaptor + 1 disk with  
formatting and auto booting software + DMA cable £69.00  
Dealers and educational software enquiries welcome - Build  
your own Atari drive.ALL THIS FOR ONLY  
£249 inc VAT  
PLUS FURTHER DIS-  
COUNT OF £49 FOR  
PEOPLE WHO OWN  
PC. DITTO 1

## What the Press says.....

Guardian - "It seemed to work well,  
and ran Dos software (in 704K of  
memory) at a reasonable speed" -  
Thursday, 6th Oct 1989.ST Format - "A hard act to follow"  
- Nov 1989ST World - "It took Germany by  
storm"  
- Nov 1989Popular Computing Weekly - "PC  
speed is capable of out performing an  
80286 band PC when fitted to a  
1040ST" - Oct 5th 1989.Micro-Mart - "There has been a lot of  
interest in it" Issue 100

## SOFTWARE

## WORD PROCESSING

That's Write .....	£99
First Word+ .....	£59
K-Word .....	£POA
Word Perfect .....	£199
Protext V4.2 .....	£POA
Tempus II .....	£POA
Microsoft Write .....	£49
Word Writer .....	£69

## DTP

Time Works DTP .....	£POA
Fleet ST. Pub .....	£89
Easy Draw II .....	£POA
Easy Draw (Super) .....	£POA
Easy Tools .....	£POA
Scan Art .....	£POA
Draw Art .....	£POA
Borders .....	£POA
Partner ST .....	£POA

## MUSIC

C-Lab Notator .....	£319
C-Tab Creator .....	£POA
Steinberg Pro 24 .....	£POA
Mastertracks Pro .....	£POA
GIST .....	£POA
Neo-Desk .....	£POA

## GRAPHICS

Cyber Studio .....	£POA
Cyber Paint .....	£POA
Cyber Sculpt .....	£POA
Cyber Texture .....	£POA
3D Developer's Disk .....	£POA
Architectural Design Disk .....	£POA
Cartoon Design Disk .....	£POA
Future Design Disk .....	£POA
Human Design Disk .....	£POA
Microbot Design .....	£POA
Video Titling .....	£POA
Sterotek .....	£POA
3D Font I + II .....	£POA

LETS MAKE .....	£POA
Greeting Cards .....	£POA
Signs + Banners .....	£POA
Calendars + Stationery .....	£POA
Art Library 1 + 2 .....	£POA
Spectrum 512 .....	£POA
CAD 3D .....	£POA
Plotter + Printer .....	£POA

THAT'S FUNFACE including  
THAT'S SWAPSHOT - £34.95

## DATABASES

Data Manager Pro .....	£POA
Data Manager .....	£POA
Base II .....	£POA
Superbase .....	£POA
Superbase Pro .....	£POA

## PROGRAMMING

Mark Williams .....	£POA
GSTC .....	£POA
Prospero C .....	£POA
Prospero Fortran .....	£POA
Prospero Pascal .....	£POA
Hi Soft Basic .....	£POA
68000 .....	£POA
Genesis .....	£POA
Start .....	£POA
ST Basic .....	£5
C-Breeze .....	£POA
GFA Basic .....	£POA

## SPREADSHEETS

K-Spread .....	£POA
VIP .....	£49
Swiftcalc .....	£POA
Saga .....	£POA
Mini Office .....	£POA

TIMEWORK DTP + EASY DRAW II £95

GASTEINER TECHNOLOGIES LTD

UNIT 12, MILLMEAD BUSINESS CENTRE, MILLMEAD ROAD, LONDON N17 9QU

Telephone: 01 365 1151. Fax: 01 884 2418

NO SALE ON • NO SALE ON • NO SALE ON • NO SALE ON • NO SALE ON • NO SALE ON



# Evesham Micros

All prices include VAT and Delivery

## ATARI

All our ST prices include: mouse etc. plus 5 disks of software including 'First Word' wordprocessor, utilities, 'Neochrome' graphics utility, game and demos.

### 520 ST POWER PACK

Amazing value, special ST package from Atari! Includes the very latest 520ST with 1Mb drive, joystick, mouse, user guide, 5 disks of public domain software, plus an incredible selection of chart-topping software with a total RRP of over £500! Software Included is:

R-Type  
Afterburner  
Double Dragon  
Super Hangon  
Space Harrier  
Overlander  
Pacmania  
Starglider  
Super Huey  
Eliminator  
Predator  
Bombjack  
Out Run  
Bombuzal  
Xenon  
Gauntlet II  
Black Lamp  
Starway  
Nebulus  
Stargoose  
First Music  
First Basic  
Organiser

All  
for  
only **£339.00**  
Inc VAT & delivery

520 ST Explorer Pack latest version with 1Mb drive, 512K RAM .....	£259.00
1040 STE includes 1Mb drive, 1Mb RAM, with built-in TV modulator .....	£399.00
1040 STFM Hyper Pack, including 'Hyper Paint', 'Hyper Draw', 'First BASIC', 'Organiser' plus £50 Atari Software Offer Voucher .....	£429.00
Mega ST1 with monochrome monitor .....	£599.00
Mega ST2 with monochrome monitor .....	£849.00
Mega ST4 with monochrome monitor .....	£1099.00
SM124 monochrome monitor .....	£119.00
SC1224 colour monitor .....	£279.00
Philips CM8833 14" colour monitor (stereo sound) c/w ST cable .....	£249.00
Vidi-ST 16-tone video frame grabber inc. digitising software .....	£95.00

### AMIGA ACCESSORIES

External 5.25" 40/80 track switchable floppy drive .....	£114.95
Midi Interface by Omega Projects, including 30" serial connector .....	£29.95
Contriver Hi-Res replacement mouse, with mouse mat and pocket .....	£22.95
MiniGEN Genlock Adapter .....	£95.00
Vortex 'System 2000' 40Mb hard disk, with interface & software .....	£499.00
Philips CM8833 stereo sound version of above, + video/audio inputs, c/w cable ..	£249.00
Amiga 500 dust cover .....	£4.95

**AMIGA 500**  
**512K RAM**  
**with Clock**  
(or without)

**512K RAM/Clock**  
**features**  
Same functions as CBM A501  
Battery backed clock  
On/Off Switch  
Compact size  
Uses only 4 high spec RAMs  
Low power consumption

**INCREDIBLE**  
**VALUE!**  
**£69.00**  
with clock  
**£59.00**  
without clock

**DOUBLE TAKE!**  
**PYE 15" FST**  
**TV/MONITOR**  
(MODEL 2325)

Superb quality, stylish medium resolution FST colour TV/monitor to suit the Amiga or Atari ST. Features teletext, full infra-red remote, SCART connector, Video/Audio inputs and headphone output, 40 tuner presets, ext. aerial connector and a loop aerial. Supplied with cable (please state computer type when ordering).

**ALL THIS**  
**FOR JUST**  
**£249.00**  
includes VAT  
and computer  
connection lead

### Amiga & ST 3.5" Drives

- ★ Very Quiet
- ★ Slimline Styling
- ★ Fully Compatible
- ★ Top quality Teac/Citizen drive mechanism
- ★ On/Off switch for Amiga
- ★ External plug-in PSU for ST
- ★ Throughport for Amiga
- ★ 1Mb unformatted capacity

Fully compatible, high quality 3.5" external drives for the ST and Amiga

Amiga version only **£69.95**

Atari ST version only **£74.95**

Prices include VAT & delivery

### Western Digital Filecards

Upgrading your PC to hard disk? Look no further, we offer the best prices on top quality hardcards. Thorough documentation supplied, low power consumption, with free XTree file management software and Speedread. For Amstrad PC users we supply hardcards tested and formatted, with our simple software installation procedure. The best packages available!

21MB...£225.00 32MB...£239.00 40MB...£289.00

#### 3.5" disks

10...£ 9.95 in plastic case £11.95  
25...£22.95 in 40 cap case £29.95  
Fully guaranteed double sided media

#### 5.25" disks

25...£11.95 in 50 cap box £18.95  
in 100 cap box £20.95  
Fully guaranteed double sided media

### Amstrad PC1512/1640/2086

We offer a wide choice of Amstrad PCs with many upgrade options. For the hard disk option, check our 'Evesham Upgraded Models'. Only the best will do - so we normally upgrade by means of a Western Digital Filecard, which includes XTree & SpeedRead software; however on single drive 1512/1640 models we can offer internal installations at the same price (leaving more expansion room but no upgrade opportunity for a 2nd floppy drive). Prices in lighter type exclude VAT.

Free with 1512 models... Ability and 4 US Gold Games

	SD	DD	AMS H.D.	SD 21MEG	DD 21MEG	SD 32MEG	DD 32MEG
<b>EVESHAM UPGRADED MODELS</b>							
MONO 1512	384.35 <b>442.00</b>	477.39 <b>549.00</b>	N/A N/A	580.00 <b>667.00</b>	673.04 <b>774.00</b>	592.17 <b>681.00</b>	685.22 <b>788.00</b>
COLOUR 1512	494.78 <b>569.00</b>	555.65 <b>639.00</b>	N/A N/A	690.43 <b>794.00</b>	751.30 <b>864.00</b>	702.61 <b>808.00</b>	763.48 <b>878.00</b>
MONO 1640	474.78 <b>546.00</b>	555.65 <b>639.00</b>	738.26 <b>849.00</b>	670.43 <b>771.00</b>	751.30 <b>864.00</b>	682.61 <b>785.00</b>	763.48 <b>878.00</b>
CGA (COLOUR) 1640	581.74 <b>669.00</b>	651.30 <b>749.00</b>	825.22 <b>949.00</b>	777.39 <b>894.00</b>	846.96 <b>974.00</b>	789.57 <b>908.00</b>	859.13 <b>988.00</b>
EGA (ECD) 1640	677.39 <b>779.00</b>	738.26 <b>849.00</b>	938.26 <b>1079.00</b>	873.04 <b>1004.00</b>	933.91 <b>1074.00</b>	885.22 <b>1018.00</b>	946.09 <b>1088.00</b>
2086 MONO	584.35 <b>649.00</b>	633.91 <b>729.00</b>	813.04 <b>935.00</b>	760.00 <b>874.00</b>	829.57 <b>954.00</b>	772.17 <b>888.00</b>	841.74 <b>968.00</b>
2086 CD	656.52 <b>755.00</b>	726.09 <b>835.00</b>	903.48 <b>1039.00</b>	852.17 <b>980.00</b>	921.74 <b>1060.00</b>	864.35 <b>994.00</b>	933.91 <b>1074.00</b>
2086 12" HRCD	746.96 <b>859.00</b>	813.04 <b>935.00</b>	995.65 <b>1145.00</b>	942.61 <b>1084.00</b>	1008.70 <b>1160.00</b>	954.78 <b>1098.00</b>	1020.87 <b>1174.00</b>
2086 14" HRCD	833.91 <b>959.00</b>	903.48 <b>1039.00</b>	1086.09 <b>1249.00</b>	1029.57 <b>1184.00</b>	1099.13 <b>1264.00</b>	1033.04 <b>1198.00</b>	1111.30 <b>1278.00</b>

12 MONTHS ON-SITE MAINTENANCE PROVIDED WITH ALL MODELS OF PC1512, 1640 AND 2086 FREE OF CHARGE!

### upgrades / accessories

1512 memory upgrade to 640K .....	£39.95	Enhancer 101 replacement keyboard ...	£74.95
Maths Co-processor 8087-2 .....	£129.00	3.5" drive (720K) for SD models .....	£79.95
NEC V30 (8086 replacement) .....	£24.95	PC2000 series compatible	
Archive XL 40Mb Ext. tape streamer ..	£379.00	5.25" (360K) external drive .....	£84.95
Amstrad Modem Card V21/23 .....	£99.00	Genius GM6000 Mouse package .....	£34.95
Communicate Fax Card SR .....	£199.00	Konix PC Joystick & Controller Card ....	£28.95

### Amstrad PPCs

Low prices on all portable PCs - especially twin drive models  
prices in brackets are excluding VAT

PPC512S .....	(£373.04) £429.00	PPC640S .....	(£477.39) £549.00
PPC512D .....	(£433.91) £499.00	PPC640D .....	(£546.96) £629.00

Low price External 3.5" floppy drive (720K), suits any Amstrad PC 1512/1640 inc. DD and HD models, uses no expansion slots .... £99.95

### Central Point Software

For all your PC disk management requirements

**PC Tools Deluxe Ver.5.5...** Other utilities may claim to 'do it all' but only PC Tools Deluxe is the complete disk utility package, providing a fast hard disk backup, the best undelete available, 100% safe formatting of floppy and hard disks, unformat, reliable disk caching, compress facility, in fact everything required to manage & protect your data at a sensible price.....£59.95

### PRINTERS

All prices include VAT, delivery and cable

**star**

We use and recommend Star printers since they do offer an unbeatable combination of features, print quality, reliability and value. Get it right with a Star at our special, all in, prices. We can provide on-site maintenance contracts for only £5.75 extra.

Star LC24-10 feature-packed multifont 24 pin printer, amazing low price ...	£239.00
Star LC10 best-selling 144/36cps printer, 4 NLQ fonts, inc.2 extra ribbons free ..	£169.00
Star LC10 7-colour version of above printer, inc.2 extra black ribbons .....	£215.00
Star LC15 wide carriage version of LC10 .....	£329.00
Star LC24-15 wide carriage version of LC24-10 .....	£409.00
Star FR-10 new Professional 9pin 300/76 cps, 31K buffer, 16 NLQ fonts, EE-PROM configuration memory and 12 months on-site maintenance .....	£399.00
Star FR-15 9pin as FR10, wide carriage version .....	£499.00
Star XB24-10 Professional 24pin: 27K buffer, 4 SLQ & 25 LQ fonts with EE-PROM configuration memory and 12 months on-site maintenance .....	£499.00
Star XB24-15 wide carriage version of XB24-10, with 41K buffer .....	£649.00
NEC P2+ budget 24pin .....	£299.00
Olivetti DM100S Super 9pin 200/30 cps, inc.1 year on-site maintenance! ...	£129.95
Amstrad DMP3160/3250DI good value 10" 9pin .....	£169.00
Panasonic KXP1081 reliable budget 10" printer 120/24 cps .....	£159.00
Panasonic KXP1180 super new 9pin with over 3400 typestyles, 11" carriage ....	£179.00
Panasonic KXP1124 good quality 11" multifont 24pin printer .....	£269.00
Epson LX800 popular 10" 180/25 cps .....	£159.00
Epson LQ550 (was LQ500) good 24pin printer 150/50 cps .....	£299.00
Citizen 120D good value 10" 120 cps .....	£139.00
Mannesmann Tally MT-81 130/24 cps .....	£149.00

### HOW TO ORDER

All prices VAT/delivery inclusive  
Express courier delivery £5.00 extra  
Send cheque, P.O. or ACCESS/VISA details  
Phone with ACCESS/VISA details  
Govt., educ. & PLC official orders welcome  
All goods subject to availability E.&O.E.  
All products covered by 1 year guarantee  
Fax: 0386 765354

**Evesham Micros Ltd**

Unit 9 St Richards Rd  
Evesham  
Worcs WR11 6XJ  
Tel: 0386 765500

Also at: 1762 Pershore Rd., Cotteridge, Birmingham, B30 3BH Tel: 021 458 4564



# olivetti

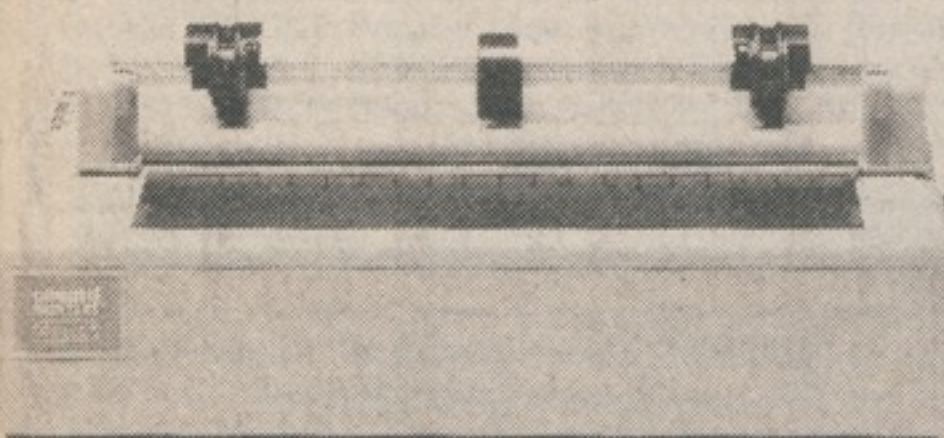
at

# Evesham Micros

Two names  
you can trust

**SPECIAL  
PURCHASES**

## OLIVETTI DM100S



**Top value, high  
performing 9-pin  
dot matrix printer**

- 200cps draft, 30cps NLQ print speed
- Pica, Elite and Condensed printing
- Standard Centronics Parallel interface
- Friction and Tractor feed
- Optional auto cut sheet feeder available

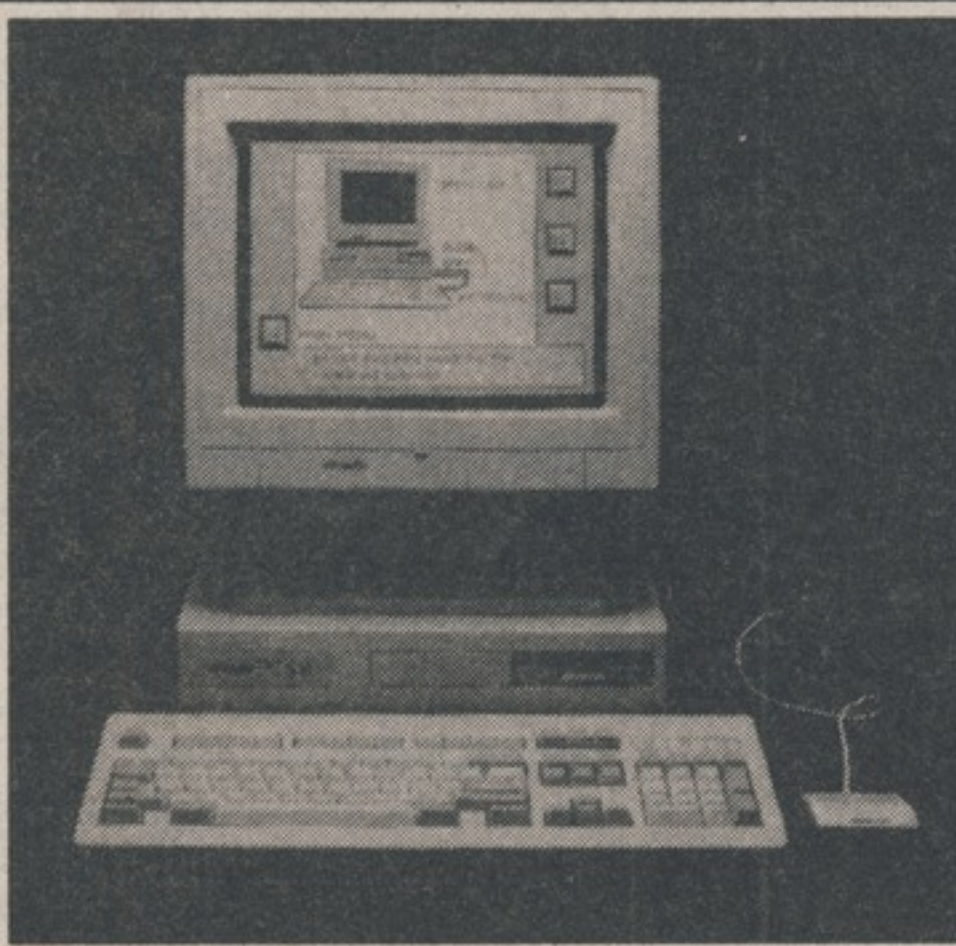
**UNBELIEVABLE  
PRICE !**

**£129.95**

Cut sheet feeder also  
available for only £79.95  
Prices include VAT, delivery and  
12 months on-site maintenance!

## PCS series:

**TOP QUALITY - HIGH PERFORMANCE!**  
All prices shown include VAT, delivery  
and 12 months on-site maintenance



### PCS 86

	14" MONO	14" COLOUR
SINGLE FD	£688.85	£918.85
TWIN FD	£803.85	£1033.85
20MB HD	£1033.85	£1263.85

- ◆ NEC-V30 microprocessor 10Mhz clock speed, 0 wait states
- ◆ 640K RAM standard, upgradeable to 2.5Mb on motherboard
- ◆ Single or Double 3.5" floppy drives with 720K formatted capacity
- ◆ Optional 20Mb Hard Drive version also available, with 27ms access time
- ◆ 3 Full size 8-bit XT-compatible expansion slots
- ◆ Socket for 8087 maths co-processor
- ◆ 1 x RS232 Serial interface and 1 x Centronics Parallel interface
- ◆ VGA compatible (OVC) display controller fitted standard
- ◆ VGA monitor supplied: 14" Colour or 14" Flat-screen Mono. (dot pitch 0.39mm)
- ◆ Mini-din PS/2 interface sockets for keyboard and mouse
- ◆ 101/102 key AT-layout PS/2 compatible keyboard
- ◆ Optional 'Genius GM-U2' hi-res mouse available for only £49.95 inc.VAT
- ◆ Optional external 5.25" drive also available - phone to check availability.
- ◆ Plus: 'Logotron 8-in-1 Professional' integrated package, free with all models.

### PCS 286

	14" MONO	14" COLOUR
TWIN FD	£1148.85	£1378.85
20MB HD	£1263.85	£1493.85
40MB HD	£1378.85	£1608.85

**FREE WITH ANY PCS 286 - OLIVETTI DM100S PRINTER  
AND 'LOGOTRON EIGHT-IN-ONE PROFESSIONAL' !**

- ◆ Intel 80286 microprocessor 12MHz clock speed, 1 wait states
- ◆ 1Mb RAM standard, upgradeable to 4Mb on motherboard
- ◆ Single or Twin 3.5" floppy drives with 1.44Mb formatted capacity
- ◆ Optional Hard Drive versions: 20Mb (27ms access time) or 40Mb (29ms)
- ◆ 3 Full size expansion slots; 1 x 8 bit and 2 x 16 bit XT/AT-compatible
- ◆ Socket for 80287 maths co-processor
- ◆ 1 x RS232 Serial interface and 1 x Centronics Parallel interface
- ◆ VGA compatible (OVC) display controller fitted standard
- ◆ VGA monitor supplied: 14" Colour or 14" Flat-screen Mono. (dot pitch 0.39mm)
- ◆ Optional 'Genius GM-U2' hi-res mouse available for only £49.95 inc.VAT
- ◆ Optional external 5.25" drive also available - phone to check availability.



# ATARI®

# ABC-286

**SUPERB LOW  
PRICES ON THIS  
GOOD QUALITY  
IBM PC-AT-286  
COMPATIBLE**

### Price Breakthrough!

ABC-286 S.D./30Mb  
with Mono Monitor ... £ 999.00

ABC-286 S.D./30Mb  
with EGA Monitor ..... £1199.00

\*\*\*\*\*

Optional 5.25" 1.2Mb internally  
fitted floppy drive available ..... £119.00

Prices include VAT/Delivery

- ☆ 80286 Processor running at 8Mhz clock speed
- ☆ 640K RAM standard, expandable to 1Mb
- ☆ 3 AT / XT compatible Expansion slots
- ☆ 1 RS232 Serial and 1 Parallel ports
- ☆ Disk controller supports two floppy and two hard disk drives
- ☆ One 3.5" (720K) floppy drive and a 30Mb hard disk drive fitted as standard
- ☆ Socket for 80287-8 Maths Co-Processor
- ☆ Video graphics adapter supports EGA, CGA, MDA and Hercules, with digital video port
- ☆ Dimensions: 15 x 38 x 41 cm
- ☆ With 102-key DIN spec. AT-Protocol keyboard
- ☆ Supplied with MS-DOS 3.3 and GW-BASIC

### OLIVETTI PG-306

High performance HP-Laserjet compatible laserprinter

- 75 to 300 dpi graphics resolution
- 6 pages/min. (A4/B5/letter/legal)
- 8 resident fonts including Courier
- 512K RAM (upgradeable)
- Standard Centronics interface
- Expansion possibilities include PostScript board & serial interface
- Toner cartridge & drum supplied
- 12 months on-site maintenance

**£1144.25**

INC.VAT, DELIVERY  
AND 12 MONTHS  
ON-SITE  
MAINTENANCE

**How to order from  
Evesham Micros**



**MAIL ORDER SALES:**  
☎ 0386-765500



**Technical Support (Mon-Fri):**  
0386-40303

All prices include VAT and delivery. Express Courier delivery £5.00 extra.

✉ **Send cheque, Postal Order  
or ACCESS/VISA card details**

Govt., educ. & PLC orders welcome  
Same day despatch whenever possible  
All products covered by 1 year guarantee  
All goods subject to availability, E.&O.E.

**Retail outlets at:** 1762 Pershore Road, Cotteridge, Birmingham B30 3BH Tel: 021 458 4564  
63 Bridge Street, Evesham, Worcs WR11 4SF Tel: 0386 765180  
5 Glisson Road, Cambridge CB1 2HA Tel: 0223 323898

**Evesham Micros Ltd**  
UNIT 9 ST RICHARDS RD  
EVESHAM  
WORCS WR11 6XJ  
☎ 0386-765500  
fax 0386-765354



# SHOPPING EXPRESS READER ADS

**There are great bargains to be had in our reader ads section, but remember to check before you buy - we cannot be held responsible for the quality of the goods on offer!**

## ● FOR SALE

**SPECTRUM** games, books, hardware, send SAE for list. John Allen, 2 Ripon Road, Plumstead, London SE18 3PS. 01 316 0546.

**CBM 64C** (boxed), hardly ever used, C2N (boxed), 40 hot original games. All excellent condition, genuine reason for sale. Only £70. Phone Adam (0423) 324108.

**ABC** Business Package word processing, spreadsheet, book keeping etc £60. 061 445 1573.

**COMMODORE 64**, C2N, Manual, PSU and games £95. Also monitor style 8 channel colour TV, as new £90 (deliver locally) Tel 0695 32818 (Skelmersdale).

**DRAGON 32** with mains adaptor, all leads and tape player/ recorder, still packing with user manuals £30. Lincoln (0522) 695386.

**ST** originals, Hewson Premier vol 1, Sleeping Gods, Galdragons Domain, Heroes of the Lance, Shadowgate, Starglider I, Gauntlet II, £7 each ono. Ring Chris 01 337 403 evenings.

**APPLE II** Europlus with monitor, Two disc drives information and Data Master Discs, Manuals £80 ono. 0702 711119.

**AMIGA 2000** XT-Bridgeboard with 5 1/4" drive MS-DOS 3.2 leads and manuals only £100 and free EGA Card phone 061 998 5981.

**2 MEG RAM** card for Amiga A/B 2000 (Micron the best) mint condition only £250. Phone 061 998 5981.

**XEROX 4020** colour ink jet printer with Spare ink pack, the ultimate printer for the Amiga or IBM only £550 phone 061 998 5981.

**SUPERCALC IBM** 3 1/2 format spreadsheet £75 ono. Ring Tony 0256 29994.

**REFLEX IBM** 5 1/4 format database £75 ono Ring Tony 0256 29994.

**+2A SPECTRUM** Echomaster, synth, joystick, books, loads of software £200. Ring Tony 0256 29994.

**PSION** organiser, maths and science packs £15 for both. Ring Tony 0256 29994.

**BBC B** complete with cassette recorder, 1 joystick and various games, all in excellent condition £120 phone 0734 419417 week-ends and weekday evenings.

**COMMODORE 64**, C2N cassette 1571 disk drive, Brother printer, software, mouse, Light Pen, manuals, books, magazines vgc. Cost £1200 sell £350 ono 0787 77842. Suffolk.

**SOFTWARE** for IBM PC's, Protext, Word Processor £20, Fantasy V2.0 DTP £20, Directory Assistance £15, File Rescue plus £15, Top copy £15. £75 the lot 02191 424526.

**C64** games, form only 75p. All original cassette and disc. Some new some old. Send

SAE for list to Dave Capewell, 63 Bailey Road, Blurton, Stoke on Trent staffs ST3 2DL. 329 427

**SPECTRUM +2**, 6.0 games, 2 joysticks, all in vgc and in original boxes. 2 years old, games include Robocop, R-Type, Outrun, Batman 2, Leaderboard etc £125 telephone Norwich (0603) 860012.

**CASIO CZ101** £130, Roland MT32 Multi Timbral synth expander £280 both as new. 097422 288.

**ATARI ST**, Microsoft Write original for sale, make me a reasonable offer. Ring 0904 625016 after 6pm ask for Simon.

**SEGA** System version of Monopoly £15! RRP £30. Call Markus on 0372 275098 after 6pm.

**ISSUE 7, BBC B** in perfect condition. Word-wise word processor in ROM included and dust cover. All for £250 ono. Call Markus on 0372 275098.

**COLOUR** monitor (Taxan vision Ex) only £90! Call Markus on 0372 275098 after 6pm.

**AMSTRAD CPC464** and green monitor, TV modulator and games £180! Call Markus on 0372 275098 after 6pm.

**ATARI ST** 1M memory, hi-res mono monitor, two disk drives, joystick, Fast Basic, C Compiler, many games all for 3450 ono Ring 0634 727312 (evenings).

**COMMODORE 64** + 1541 disk drive + CN2 datacassette and turbo 50 "Expert" cartridges, disks and lots of software. Telephone 0487 814908 after 6.30pm £225 the lot!

**DMP 2000** dot matrix printer, in desperate need of repair, due to malfunction. Yours for just £40 ono. Ring 0274 635212 (ask for Stuart).

**ACORN** Electron with tape deck, leads and manual as new never used only £50. 0235 814272 (Oxford).

**AMSTRAD CPC** stuff. Rombo Rombox with Utopia, Rodos, Rodos Extra, Micro music creator £100. Amdrum £15, Books, mags, games, serious software. Tape/disc Aberdare 0685 876040.

**IBM 3.5"** software for sale. Gauntlet £6, Captain Blood £3, Operation Neptune £3, D.I, F16, EGA £10. Phone Daniel 0344 50393 evenings or write. 19 Wheatley, Great Hollands, Bracknell, Berks RG12 4UF 0344 50393.

**COLOUR CPC** 6128 with Multiface, Protext, Utopia on Rom. Loads of serious and games software. £600 ono contact Mark on Brighton 0273 693088 anytime (work), will demonstrate.

**ST** language for sale, Hi soft's FLT Modula 2 Developer. Hardly used, so a bargain at £40. Phone John on 01 546 0993 enjoy.

**OLIVETTI**, 4 meg above board memory board for AT or Cloan (16 Bit Bus) only £200 with 2 megs or 3350 with 4 megs Lim/Ems compat. Phone 061 998 5981.

**TANDON** 360K 5 1/4 floppy drive £25. Phone 061 998 5981.

**ICL** Computer 10 meg hard drive, 80 track teack floppy, one meg ram, colour monitor and keyboard runs CP/M and MS-DOS. Only £100 phone 061 998 5981.

**DRAGON 32** with recorder, plus many games, leads etc vgc £50 ono Ring 0983 872616 (I.O.W.).

**ATARI** single sided drive mech, for sale £15 ono. Contact Moray Saville, 3 Victoria Cres, Elgin, Moray IV30 1RF. 0343 543372.

**ADFS** chip for BBC micro, offers around £15 please: Keith, 56 Aldham House Lane, Wombwell, Barnsley, South Yorks S73 8RG.

**SEGA** games console (almost unused, with original box and packaging), also with 6 exciting games and 2 control pads. All for £70 ono. Ring 0274 635212 (ask for Stuart).

**PSION** MC400 latest portable computer system software inc w. proc, D'base, solid state drives, manuals, still boxed cost £800+ offers. Phone 0282 53179 any time.

**AMSTRAD CPC** 6128 disk, colour computer, manual, joystick, games and spare disks, colour monitor, complete with dedicated computer desk, for £290. Buyer collects. Upgrade dictates sale. Phone Dunstable 601479 evenings.

**CPC6128** original disk software including manuals. Stop press £20, Tasword £10, Fig-Forth £10, GAC £10, or £40 the lot. Van Dam, 8 King Street, Glastonbury BA6 9JY 0458 31970.

**DISKS** 31/2" Sony licensed Top quality loads a them to get rid pf DS/DD B5TPI. box of 50 £20 upwards. Phone now on 01 800 7859 all guaranteed.

**APPLE II** Europlus, 2DD monitor 80 column language, PAL and serial cards plus manuals and various software £200 ono. Tel 0703 613918.

**PSION** organiser, datapacks 128K and 16K, comms adapter (RS232) £100. 01 940 8070 (weekdays). Ask for Andy Miller or leave a message for me (cash).

**KORG/M1** music workstation. New with box and leads £1100. 01 940 8070 (weekdays) ask for Andy Miller or leave a message for me (cash preferred).

**AMIGA 500**, colour monitor, printer, 2nd drive, A501 Ram, Top software for programming, games, music and business. Manuals, disks and magazines £700 (cash) 01 940 8070 (weekdays) ask for Andy Miller.

**MEMORY** upgrade for Atari ST/M/FM's also spare bits and pieces, Power Supplies, custom chips etc. Ideal for repairs (0495) 272092 10am to 2pm. Mark anytime week-ends.

**AMIGA 500** with 1 meg expansion plus clock with software worth £500 plus. Sell for £300, boxed as new. Tel Colin Walker 0777 701252 after 6pm.

**C64**, 1541 disk drive, Philips colour monitor, over 70 games plus 12 disk games, auto-dialing, modern manuals, mags & leads, joystick and tape deck £300 offers neg. Phone Greg 0202 499536.

**ACORN** Electron, includes plus 1 and solidisc ADFS with software and all manuals. All items as new. Cost £240 will accept £80, no offers. Tel 0990 27928.

**SHARP** MZ-700 original software, all sorts, games, utilities, business etc. Sell one third original price. Tel Paul, Leeds 0532

498985 evenings please.

**AMIGA** brand new mouse £18.00, Modulator £8.00, Powerpack £20 and games, Spectrum Powerpack £5.00 Spectrum games, tapes 50p each phone Norman 0245 352538.

**AMSTRAD** 464, 664, 6128, AMX mouse over 60 cassette games DMP 2000 printer for sale, mouse and games £85, printer mouse and games £175. Ring 6pm-7pm. 091 252 4813.

**TRIANGLE** Turbo (28ms) 46 meg hard disk, £400. Philips Monitor £166 both boxed, contact Colin Walker, Welham Hall, Welham, Nr Retford, Nottinghamshire or tel 0777 701252.

## ● GOODS WANTED

**"TRANSFORMER"** for the Amiga 500. Good money. Ring 0538 373008 and ask for Simon - any evening.

**WANTED** Manual for Citizen 120D Printer. Phone Andy on (0538) 388031.

**MULTIFACE** 3 for Spectrum plus 3. Alan Beales, 1 Friends-Field, Bures, Suffolk, CO8 5LH.

**DISK** Drive for Spectrum+ will pay up to £60 depending on system. Tel: 0670 856617 any time.

**AMSTRAD** CPC 464 Dk'tronics 64k memory expansion wanted £25.00 offered. Anthony Richards, 100 Cefn Hengoed Road, Winchwen, Swansea, S. Wales. SA1 7LE. Tel: 0792 791921.

**WANTED** Z88 computer, will swap two ZX80 computers, also Kampack books, one pools prediction prog. All collectors items, very rare, also wanted Jupiter Ace Rampack. Tel: 0276 79240.

**DEAD** PC desired by necrophiliac. Very sick one might do (eventually) as long as it is cheap. 0453 860827.

**WANTED** 1901C monitor for C128 plus cable, will pay good price include PET2001 (old ROMS) plus P.S.G. Few games, may suit electronics hobbyist. Phone Wakefield 0924 259400 evenings.

**WANTED** ZX one interface, cheap will collect Dorset, Somerset, Wilts or near. Phone 0747 840 641.

**WANTED** Double sided drive for Atari ST part exchange for my single sided drive and some cash, or around £40 (internal) Tel: (0908) 220486 please.

**ATARI** exchange Mavis Beacon Typing for IBM ver. Tel: B'ham 021 356 9517.

**BOOKS** on Amiga particularly on m/c programming. In fact anything concerning 68000 Amiga/Atari. Fred Ball, 292 Bispham Road, Blackpool, FY2 0HQ. Tel: 0253 593530.

**SEGA** games wanted, will pay £10 for ones required. PC Engine games wanted, will pay £15 for ones required. Phone 01 871 9398.

**HELP** American Digital Research MP/M86 systems disk/s wanted to run FTOS-V with IBMulator to run MS/DOS. Please ring John (0743) 242651.

**WANTED** desperately duff Amstrad 464 keyboard for spairs. Tel: Alistair, 0225 766205 and thanks a lot to Paul in Derby for all your help.

**WANTED** Word Processor for Amiga pref. Protext for cash or s/ware. For sale JVC video camera £600.00 Phone Mike 0695



# ADVANTAGE PC SHAREWARE



- POPULAR TRIED & TESTED PROGRAMS
- FAST DESPATCH - FIRST CLASS
- EASY TO RUN AND USE

**NEW!**  
**ATARI OWNERS**  
**SEND FOR YOUR**  
**FREE**  
**PUBLIC DOMAIN**  
**SOFTWARE**  
**CATALOGUE**

**OUR PRICES INCLUDE VAT AND POSTAGE**

5 DISCS	£13.25
4 DISCS	£11.25
3 DISCS	£9.45
2 DISCS	£6.95
1 DISC	£3.95

Over 5 Discs £2.50 each for 3.5" Please Add £1 per Disc

**CALL 0242 224340 NOW!**  
**FAX: 0242 226755**

## WORDPROCESSING

- PC-WRITE The well-established multi-function WP
- PC TYPE+ Popular WP, Spell Checker, Undo, Help. 4 DISCS
- PC TYPE II Great new WP from Buttonware. 3 DISCS
- GALAXY Like WordStar with pull-down menus. 2 DISCS
- MINDREADER Clever WP anticipates what you're typing
- PC-OUTLINE Popular brain-storming ideas processor
- SPELLING CHECKER For most WP's. Can update dictionary
- THESAURUS Great when searching for alternative words
- HYPERSHELL Versatile UK hypertext program. 2 DISCS

## SPREADSHEETS

- PC-CALC+ Well-known Buttonware spreadsheet. 3 DISCS
- AS-EASY-AS Popular and easy to use. 123 Compatible
- POWER SHEETS Highly rated 3D spreadsheet. 3 DISCS
- QUBECALC Easy to use 3-dimensional spreadsheet.
- GOALSEEKER Time-saving program helps create spreadsheets
- PIVOT! Prints spreadsheet in landscape or portrait mode

## DATABASE MANAGERS

- PC-FILE+ Very popular database with mailmerge. 3 DISCS
- PC FILE-dB dBase power at shareware prices. 3 DISCS
- FILE EXPRESS Straightforward database system. 2 DISCS
- WAMPUM Implements dBase III language-hard disc. 2 DISCS
- DREAM Extensive relational database. 3 DISCS

## PRINTING

- PRINTER TOOLBOX Sideways printing, Spooler, Print Control, Word Counter, Indexer, Text Analyser and more.
- PRINTSHOP features DIY Business Cards, Car Window Posters, Letterhead Maker, Cassette and disc labellers.
- LQ Set of new fonts to enhance your printed text.
- SIGNSMITH Create your posters, leaflets and letterheads.
- BRADFORD Typesetting quality on a dot-matrix printer.
- TYPEWRITER EMULATOR For quick messages, envelopes etc.

## HOME & BUSINESS

- FREEWAY CASHBOOK UK home account and budget. 3 DISCS
- NOYES CASHBOOK New UK cash analyser. 999 headings.
- FAST BUCKS Full feature account and budget. 2 DISCS
- HOME INVENTORY/HOME INSURANCE Log your possessions and estimate their value for insurance purposes.
- FREEWAY ACCOUNTS PLUS Popular UK Package with Sales, Purchase & Nominal Ledgers. 3 DISCS
- BUSINESS GRAPHICS Line, paragraphs, Piecharts, 2 DISCS.
- 100 STANDARD BUSINESS LETTERS to use and adapt
- EZ-FORMS standard business forms to use and adapt
- LABEL MAKER Simple mailing label database and printing
- PRO-COMM PLUS UK The definitive communications program.
- EAZI-LINK Supports Prestel and ViewData comms. 2 DISCS
- STD CODES in numerical order with corresp. exchanges.

## CUSTOM DATABASES

- RECORD COLLECTOR Catalogue and sort your LP's & CD's.
- BOOK MINDER Catalogue and sort your book collection.
- PHOTOGRAPHER Catalogue printing, processing, archives.
- HOME VIDEO Catalogue and sort your videos. 2 DISCS.
- COMPLETE FAMILY HISTORY Plot your family tree. 2 DISCS.
- MATCHMAKER Now you can start your own dating agency!
- TIMETABLE Class/Staff timetabling for schools. 2 DISCS.
- RE-MEMBER Easy to use database designed for clubs. UK.

## INFORMATION SYSTEMS

- MOVIE DATABASE Over 3000 films & videos. 2 DISCS.
- GIFT IDEAS GENERATOR For birthdays & Christmas.
- MICRO COOK Recipes organiser - with many included.
- BARTENDER Learn how to mix those exotic cocktails.
- NIGHTSKY Definitive computer planetarium UK. 2 DISCS.
- HOROSCOPE Prints horoscope and astrological data.
- ASTROL-95 Astrological charts & horoscopes. 2 DISCS.
- BIORHYTHM MONTHLY Plot your biorhythms and compare.
- SPEED READING Practical Course with exercises

## LIFESTYLE

- WEIGHTWATCHER Control calories and lose weight.
- HAVING A BABY Plus useful baby name selector program.
- LIFESTYLE COMPENDIUM Personality assessment. Personal Success, Self Analysis, Life Expectancy, Smoking.
- PC-SPORT Quickly generate your own league tables.
- PUNTERS PAL Aims to improve your betting odds.
- DANCE TUTOR Teach yourself Disco dancing.

## PROJECTS & PASTIMES

- PC JOKES Hotboot, Insults, Drain, Locust, Hotlot
- Alien Name Generator, BackTalk, Buzzword Generator
- PC JOKES II April Fool, Deceive, Busy, Soap Opera Plot Generator, Headline Generator, Jive Talk, Madlib
- PAPER AEROPLANES Loads of designs ready to print out
- ORIGAMI Study the oriental art of paper folding
- POET'S CORNER Produce computer-created poems. 2 DISCS
- GREETINGWARE Create your own on-screen Greetings Cards.
- KNIT-WIT Create a picture on the screen and this will generate your knitting pattern for you. UK.

## EARLY LEARNING (AGE 3-12)

- AMANDA'S LETTER LOTTO Keyboard and letter skills
- ABC FUNKEYS Entertaining way to learn the alphabet
- AMY'S FIRST PRIMER Basic arithmetic and letters
- CHILDREN'S EDUCATION Teaching while at play:- Alphabet, Animals, Clockgame, Hangman and Mosaic
- NUMBER PRIMER A good way to learn basic numeracy
- WORD PRIMER A good way to learn words and spelling
- ANDY'S WORD GAMES Play Opposites, Synonyms, Word Find Odd man out, Categories, Comparisons, Plurals.

## EDUCATION FOR CHILDREN & ADULTS (AGE 5 UP)

- EXPLORING WORDS Hangman, Spelling, WP, Letterfall
- EXPLORING MATHS Funnel & Buckets, Algebra, Prime
- EXPLORING TIME Telling, Speaking, World Timezones
- EXPLORING SCIENCES Physicalc, Equator, Planets
- EXPLORING YOUR IQ Brain-boggling tests and puzzles
- EXPLORING ELECTRONICS From Ohm's Law to Amplifiers
- EXPLORING GEOGRAPHY Gazetteer, 3D-World, Weather
- EXPLORING MUSIC Player Piano, Composer, Polyphony
- EXPLORING GRAPHICS Animator, Etch-A-Sketch, 3DStar
- EXPLORING COMPUTERS Beginners guide to computers
- Learning a foreign language? Then try this selection of tutorials - each title on its own disc:-

- \* FRENCH \* SPANISH \* ITALIAN \* GERMAN \* HEBREW
- \* CANTONESE \* SPANISH FOR TRAVELLERS
- \* FRENCH VERBS \* SPANISH VERBS \* JAPANESE
- \* FRENCH HANGMAN

## MATHS & SCIENCES

- WIZ QUIZ Teaches maths in an entertaining way.
- MATHS TUTOR Arithmetic through to higher maths.
- STATISTICS Data manipulation & analysis. 3 DISCS.
- PROBABILITY & STATISTICS curve-fit & simulation.
- MATHS LAB Linear Algebra & Matrix Theory. 2 DISCS.
- X-Y SEE Teach & test maths using graphics. 2 DISCS.
- ELECTRONICS Multi-tool package for engineers.
- PHYSICS GCSE REVISION A novel aid to study. UK.
- COMPUTER SCIENCE GCSE REVISION Study aid UK.
- MOLECULE BUILDER Graphics of molecules. 2 DISCS.

## UTILITIES UNLIMITED

- ESSENTIAL UTILITIES Over 50 of the best utilities
- ADVANCED UTILITIES A more specialised collection
- DISK COMMANDO Professional package similar to Norton Utilities at Shareware prices. 2 DISCS
- PROFESSIONAL MASTERKEY Powerful disc/file editor
- PACKDISC Economise space and speed up your hard disc.
- FLEXIBAK A fast, easy to use hard disc backup program.
- FLU-SHOT+ Helps you deal with and avoid PC viruses.

## GRAPHIC DESIGN

- DANCAD Accurate 3D frame drawing & animation. 2 DISCS
- IMAGE-3D create effective 3D drawings on CGA or EGA
- PC-KEY-DRAW The very popular Desk Top Publisher and scaled drawing package. 3 DISCS
- PC-KEY-DRAW LIBRARY Picture & Font Library Utilities
- FINGERPAINT Painting program runs on MSDOS not GEM
- CHARTS UNLIMITED graphics & text processor.
- FLO-DRAW Flow diagram text & graphics editor. 2 DISCS
- GRAPHIC ANIMATOR Create animated picture sequences.

## BOARD & CARD GAMES

- PC-OPOLY PC version of the well-known board game
- SCRABBLE Good implementation - updateable dictionary
- AT-Scrabble play against computer AT only
- WORLD DOMINATION The classic game of Risk and strategy
- SLEUTH Exciting murder msytery solving game
- CHESS & CHECKERS Quality graphics versions of games
- TWO BRIDGES Two versions of the famous card game.
- GAMBLER'S DEN Craps, 21, Poker and Pontoon
- CARD SCHOOL Canasta, Gin Rummy, Heart and Lowball
- PATIENCE APLENTY Three different games of Patience.
- PUB GAMES features Dominoes and Cribbage

## SIMULATIONS

- FORD SIMULATOR Test drive a selection of Ford cars
- SOCCER GAME Manage your own soccer team to Div. 1. UK
- BASSTOUR Absorbing fishing simulation for EGA.
- PC-PRO GOLF High resolution golf. 2 DISCS.
- MEGALOPOLY Speculate and be a big business tycoon
- WAR GAME Strategy game based on war games rules.

## ADULT ENTERTAINMENT

- GET LUCKY Rather naughty Adult Trivia & Strip Poker
- EXPLOITS IN FANTASYLAND! An amusing and saucy romp. UK
- PIN-UPS Selection of pin-up pictures to view or print
- LES GIRLES More naughty pictures to view or print.
- ADULT HUMOUR Large collection of rather rude jokes
- ADULT ADVENTURES Bad-Bad, Drive-In and Fifi
- ADULT GAMES features rude Space Invaders & Sexware

## ARCADE GAMES

- STAR TREK puts you in command of the Enterprise.
- POPCORN featuring superb graphics and fast action.
- DRACULA IN LONDON role-playing game based on novel.
- WANDERER based on Boulderdash theme. For CGA or Herc.
- TANK BATTLES Graphic action for two players.
- CAPTAIN COMIC High quality animated graphics.
- SNARF multi-level treasure-hunt game for EGA.
- PINBALL WIZARD Five fast action pinball machines.

## ADVENTURES

- COLOSSAL CAVE ADVENTURE The one that started it all.
- DUNGEONS & DRAGONS Fascinating and complex adventure.
- GOLDEN WOMBAT OF DESTINY British Infocom-style game.
- JACARANDA JIM Escape from the planet Ibberspleen IV.
- KINGDOM OF KROZ - voted best game in Shareware.
- RETURN TO KROZ - The sequel - even more challenging.

**JOIN THE INDEPENDENT COMPUTER USER GROUP**  
**GET YOUR SHAREWARE**  
**FOR JUST £2 A DISC (3.5" £3)**

- \* OBTAIN DISCOUNTS ON COMMERCIAL SOFTWARE
  - \* RECEIVE A REGULAR MONTHLY NEWSLETTER.
  - \* USE OUR TECHNICAL SUPPORT SERVICES.
- All this for just £15 a year (EC Countries)  
 £18 (Non-EC Countries)

## GAME COMPENDIUMS

- CLASSIC GAMES Space Invaders, Pacman, Pacgirl, Ribit, Bricks, Donkey Kong, Q-Bert, Jumping Joe
- FUN AND GAMES Pango, Bouncing Babies, Elevator, Centipede, Pyramid, Dragons, Pac, Osbit
- MAZING GAMES Treasure Hunt, Amaze, Polymaze, Castle, 3-Demon, Fire, Chase
- LOST VEGAS One Arm Bandit, Roulette, Backgammon, Biorhythm, Keno and Casino featuring 4 more games
- SKILL & STRATEGY Frigate (Ships) Big Rig (Trucking simulation), Stock Exchange Game, Air Traffic Control
- COME IN PEACE Striker, Paratrooper, Round 42, Sopwith, Dragonfly, Landmine
- STAR WARRIORS Emergency Mission, Quantoid, Kamakaze, Rescue, Rockets, Spacewar
- PC CHALLENGE PC-Chess, Othello, Entrap, Hexplode, Kalah
- JUNIOR CHALLENGE 3D TicTacTo, Dotto, Draughts, Mastermind, Brainstorm, Gomoku and Four-In-A-Row
- MONOGAMES 18 games for Mono/Hercules PC's. 2 DISCS
- KEEP THEM AMUSED Burger Blaster, Grime, Racer, Ninja, Caverns, Galaxy
- WIT YOUR PITS Battleships, Five-In-A-Line, Stock Game, Sales Game, Rogue (Artificial Intelligence), Eliza
- FACE THE ACTION Batalia (2 player) Tank (1/2 Player), Moonbase, Blort II, Gemini (can play 2-computer game)
- BLOCK & TACKLE Nemon, Qix, Xonix, Blockade, Ski-ing, Mummies, Lazer, Beast, Tron
- BASIC AMUSEMENTS Over 60 games to amuse and teach (2 DISCS)
- SPY CATCHER Master Spy, Raid Over Auschwitz, Hostages, Brimstone, Mad Scientist (Mad Scientist is for BASIC2)
- GOOD SPORTS PCTennis, Teed Off (Golf) Sailing (in the Bermuda Triangle), Armchair Quarterback (Football)
- SEEK & DESTROY Galactic Conquest, Daleks, Depthcharge, Lazy Monday, Intercept, Berzerk
- SPACED OUT Saucer, Crisis, Encounter, Xo and Space
- UP AND AT 'EM Flightmare, BitBat, Droids, Robotron, Spyder, Eggs, Stun
- PLAYTIME Lotto, Bingo, The Story of Eli, Motoman, Slug
- SPORTING LIFE PC-Golf, PC-Pool, PC-Bowl, Basketball
- ARCADIA Killer Bees, Mario Brothers, Snipe, Snakepit, Pearl, Wimps, RLogic
- WILLY AND HIS FRIENDS Willy the Worm, Willy II, Willy Screen Designer, Doctor Sleep, Disk Crash, Labbits & Voldrons



GUARANTEED ALL GENUINE UK MODELS ONLY

# ULTIMATE COMPUTERS

If you think you've tried the best...Try the ULTIMATE

Authorised Computer Dealers for  
AKHTER, AMSTRAD, EPSON, COMMODORE,  
HYUNDAI, OPUS, SHARP, MITAC, SCHNEIDER.

All products listed below carry a minimum  
12 months return to base manufacturers warranty.  
Please call for Optional ON-SITE MAINTENANCE

## THE LARGEST SELECTION OF COMPUTERS BY MAIL ORDER IN THE UK

### AKHTER

MODEL	MON	EGA
PC1000-8088 512K SD	£499	£799
PC2000-8088 640K HD20	£799	£1079
PC100-8088 640K S/D	£399	£599
PC100-8088 640K HD30	£659	£899
MINI-S 640K S/D	£479	£779
MINI-D 640K D/D	£499	£799
MINI-H 640K HD20	£899	£1199
AT286-10 640K S/D	£799	£1099
AT286-10 640K HD30	£1099	£1359
AT286-16 1MB S/D VGA		£1399
AT286-16 1MB HD40 VGA		£1759
AT386-16 1MB S/D	£1199	
AT386-16 1MB HD40	£1549	
AT386-20 4MB S/D VGA		£2229
AT386-20 4MB HD40 VGA		£2559
AT386-20 4MB HD80 VGA		£2999

### SCHNEIDER

MODEL	MON	COL	EGA
EURO PC	£349	£489	
EURO AT 512K S/D	£675	£805	£890
EURO AT 512K D/D	£765	£895	£980
EURO AT 1MB S/D	£761	£891	£976
EURO AT 1MB D/D	£851	£981	£1066
EURO AT 512K H/D	£975	£1105	£1190
EURO AT 1MB H/D	£1061	£1191	£1276
Schneider Accessories			
3.5" External Drive			£72
5.25" External Drive			£99
20Mb External Hard Disk			£269
40Mb External Hard Disk			£379
Monitor Stand			£14
All Schneider PC's & AT's include Microsoft Works, DOS & Manuals + 12 months on-site warranty.			

### COMMODORE

MODEL	MON	COL	EGA
PC/XT COMPATIBLE			
PC10 III-S/D 640K	£444	£566	£687
PC10 III-D/D 640K	£497	£621	£746
PC10 Bundles inc. Framework, mouse & MPS 1230 Printer			
PC10-D/D	£740	£896	£1013
PC10-HD40MB	£896	£1013	£1130
PC20 III-HD 640K	£631	£749	£868
PC30-286HD 640K	£935	£1052	£1130
AT80286 COMPATIBLE - VGA'S			
PC40-40MB 1 MB	£1291	£1462	
PC40 + TAPE	£1559	£1759	
Includes 12 months on-site warranty			

### PORTABLES

MAKE	MODEL	PRICE
AMSTRAD + Phone	PPC512S	£360
AMSTRAD + Phone	PPC512D	£467
AMSTRAD + Phone	PPC640S	£445
AMSTRAD + Phone	PPC640D	£552
SHARP	4602	£863
SHARP	4641	£1463
SHARP	5541	£2330
SHARP	7221	£1699
SUPERSPORT	D/D	£977
SUPERSPORT 286	20MB	£2237
SUPERSPORT 286	40MB	£2657
TURBOSPORT 386	40MB	£2797
AKHTER 286-3200	20MB	£1695
SCHNEIDER	PC7640	£1418
SAMSUNG S5200	32MB-AT	£1693
VICTOR V286P	30MB	£2499

### AMSTRAD

MODEL	MON	COL	EGA
PCW8256	£310		
PCW8512	£395		
PCW9512	£424		
PC1512SD	£360	£437	
PC1512DD	£437	£513	
PC1640SD	£451	£536	£621
PC1640DD	£512	£597	£682
PC1640HD	£682	£768	£853
Mono Col 12" 14"			
PC1286SD	£750	£835	£920
PC1386SD	£1180	£1265	£1351
PC2086SD			
+SOFT	£531	£617	£702
PC2086DD			
+SOFT	£595	£680	£765
PC2086HD			
+SOFT	£765	£851	£936
PC2286DD	£851	£936	£1021
PC2286HD	£1021	£1106	£1191
PC2386HD	£1702	£1787	£1872
PC2386HD			£1957
All genuine models not upgraded in any way			

### HYUNDAI

Note, Base units only. Monitors are separate.				
Model	Mono	Col	EGA	VGA
SUPER 16-TE PC/XT 640K 10Mhz Metal Case				
Super 16-TE S/D	£361	£361	£455	£511
Super 16-TE D/D	£430	£430	£524	£580
Super 16-TE HD30	£561	£561	£655	£711
286C 8/10MHZ 512K RAM				
286 S/D	£749	£749	£749	£859
286 HD30	£949	£949	£949	£1059
386SX 8/16 Mhz 1MB RAM				
386 S/D	£959	£959	£959	£1069
386 HD30	£1159	£1159	£1159	£1269
386C 8/20 Mhz No Wait States 1MB RAM VGA				
386C S/D	£1279	£1279	£1279	£1279
386C HD40	£1599	£1599	£1599	£1599

### SAMSUNG

Model	Mono	CGA	EGA
All the following Systems are without Monitors. Please refer to monitor box.			
PC/XT			
SPC3000/1 S/D	£405	£405	
SPC3000/2 D/D	£473	£474	
SPC3000/3 HD20	£677	£677	
AT80286 10Mhz			
MFC6000/1 S/D	£812	£812	
MFC6000/2 S/D	£1015	£1015	
SPC6500/3 HD20	£1151	£1151	
AT80286 12Mhz 1MB VGA			
SPC6512/1 S/D	£1015	£1015	
SPC6512/3 HD20	£1219	£1219	
SPC6512/4 HD40	£1354	£1354	
AT80386 20Mhz 2MB EGA			
S800 D/D	£1693	£1693	£1693
All Samsung Computers include 12 months on-site maintenance.			

### MITAC

Model	Mono	Col	EGA
88 512K	£586		
88 20MB HD	£790		£1102
1000L PS/2	£730	£930	VGA'S
1000L PS/2	£963	£1163	VGA'S
286SL HD20	£1030	£1209	£1332
286SL HD42	£1163	£1342	£1465
286V HD42	£1463	£1663	VGA'S
286V HD102	£1930	£2130	VGA'S
286VE HD42	£1596	£1796	VGA'S
286VE HD10	£2063	£2263	VGA'S
386 HD42	£2330	£2568	VGA'S
386 HD102	£2796	£3130	VGA'S
All MITAC Systems come complete with 12 Months on-site warranty.			

### VICTOR

MODEL	MON	COL	EGA	VGA
VPCIIC S/D	£949	£1149	£1399	£1449
VPCIIC D/D	£1099	£1299	£1549	£1599
VPCIIC HD30	£1499	£1699	£1949	£1999
V286C S/D	£999		£1299	£1499
V286C D/D	£1499		£1799	£1999
V286C HD30	£1999		£2299	£2499
V286C HD50	£2199		£2499	£2699
V286A HD30	£2099		£2549	£2599
V286A HD50	£2299		£2749	£2799
V286S HD50	£2499		£2949	£2999
V286S HD70	£2699		£3149	£3199
V386S HD50	£3299		£3749	£3799
V386S HD70	£3699		£4149	£4199
V386S HD110	£3899		£4349	£4399
V386S HD230	£5299		£5749	£5799
V386T HD70	£5999		£6449	£6499
V386T HD230	£7699		£8149	£8199
30MB ADD-PAK	£399			

### MONITORS

MAKE	12" Mon	14" Mon	14" CGA	14" EGA	Mono VGA	Colour VGA	Multi Sync
PHILIPS	7502	7713	8833	9093	7749	9609	
	£63	£89	£199	£296	£116	£296	
	7513		9043	9043		9809	
	£77		£261	£261		£374	
	7913		9053	9053			
	£81		£296	£296			
SAMSUNG	2573	4573		4531	2611	4531	4551
	£76	£85		£299	£85	£299	£397
AMSTRAD	12MD		14CD		12HRCD	14HRCD	
	£119		£199		£294	£383	
AKHTER	ACL12G	ACL14G	VISION	ACL-3	ACL-VM	ACL-V	ACL-M
	£60	£85	£199	£259	£110	£289	£355
HITACHI						480 AUTO	
						£358	
Notice: All Samsung Monitors come with 12 Months on-site maintenance							

### ATARI & AMIGA

MODEL	PRICE
ATARI 520ST-FK + Power Pack	£309
AMIGA 50 + BATMAN Pack	£318
1MB External Disk Drive Amiga	£63
1MB External Disk Drive Atari	£71
42MB External Hard Disk both	£399
Amiga to Scart Monitor Cable	£7.69
Atari to Scart Monitor Cable	£7.69
Amiga Dustcovers	£4.95
Competition Pro Extra Joystick	£10.59
Philips CM8833 Colour/Stereo	£199
Atari SM124 High Res Mono	£115

### BITS & PIECES

Model	Price
Akhter Modem V21-V22-V22Bis-V23	£119
Acco-in line 64K Buffer Par	£95
Logitech Serial Mouse + Software	£73
20Mb Hard Card 2 yr Warranty	£189
30Mb Hard Card 2 yr Warranty	£195
5.25" 1.2Mb Floppy Drive	£59
3.5" 720K Floppy Drive	£59
3.5" 1.44Mb Floppy Drive	£69
102 Key Keyboards PC/AT	£55
512K to 640K Memory Upgrade	£29
Mouse Mats	£4
80 col Printer Muffler	£49
132 col Printer Muffler	£53
80 col Desktop Printer Stand	£28
132 col Desktop Printer Stand	£32
Screen Filters	Call
Electric A4 Copy Holder	£94

### NOVEL NETWORKS

NETWARE 386 V3.0	£4020
NETWARE SFT V2.15	£2596
NETWARE Advanced V2.15	£1660
NETWARE ELS LEV II V2.15	£864
NETWARE ELS LEV I V2.0A	£338
NE1000 Ethernet Card	£185
NE 2000 Ethernet Card	£286
NE/2 Ethernet Card	£286
NE 1000 Compatible	£139
NETWORK Drivers	Call
COMMS Products	Call
BTRIEVE File Management	Call
XTRIEVE File Management	Call
REPORT Generators	Call
XQL Database Management	Call
UPGRADES	Call

### POPULAR SOFTWARE

Aldus Pagemaker V3	£450
Xerox Ventura V2	£520
dB Publisher	£275
3B2 DTP	£452
Timeworks DTP	£79
Framework III	£325
Paradox 3	£357
Supercalc 5	£238
Smart System V3.1	£350
Sage Sterling Bookkeeper	£64
Sage Sterling Payroll 2	£129
Sage Sterling Job Costing	£129
Sage Sterling Accountant	£162
Sage Sterling Accountant +	£259
Sage Sterling Fin Controller	£324
Sage Payslips - £28, Statement - £28,	
Sage Invoices 2 part - £33, 3- £47, 4 - £62	

### POPULAR SOFTWARE

dBase IV	£320
Lotus 123 V3.0	£259
Symphony V2.0	£370
Wordstar Prof V5.0	£199
Wordstar 2000 V3	£245
Word Perfect V5.0	£255
Harvard Graphics v2.1	£217
Mirror III UK	£130
Norton Advanced Utilities	£67
Sidekick Plus	£78
Office Works	£185
Typing Tutor Iankey	£19
Flight Simulator v3.0	£29
Crosstalk MKIV	£88
Crosstalk XVI	£69
Junior Word	£29
Junior Multiplan	£29
GEM Full range please call	



# ULTIMATE PERIPHERALS

If you think you've tried the best...Try the ULTIMATE

Thousands of stock items, please call if what you want is not advertised. Free technical support on most products. Please ring if you have any questions.

All products listed below carry a minimum 12 months return to base manufacturers warranty. Please call for Optional.

## The Largest Selection of Peripherals by Mail Order in the UK

STAR			PANASONIC			CITIZEN			EPSON		
MODEL	SPEED	PRICE	MODEL	SPEED	PRICE	MODEL	SPEED	PRICE	MAKE	SPEED	PRICE
<b>9 PIN DOT MATRIX</b>			<b>9 PIN DOT MATRIX</b>			<b>9 PIN DOT MATRIX</b>					
STAR LC10	144/36	£122	KXP 1081	144/28	£118	120D PAR	120/25	£102	LX400	180/30	£130
STAR LC10-II	180/50	£145	KXP 1180	192/36	£144	120D SER	120/25	£119	LX850	240/48	£178
STAR LC10-Colour	144/36	£159	KXP 1592	216/45	£249	180E PAR	175/30	£123	FX850	264/54	£351
STAR LC15	180/45	£249	KXP 1595	288/65	£309	180E SER	175/30	£149	FX1050	240/48	£293
STAR FR10 ★	300/76	£289	<b>24 PIN DOT MATRIX</b>			MSP15E	160/40	£164	EX800	300/60	£402
STAR FR15 ★	300/56	£379	KXP 1124	192/63	£220	MSP40	240/40	£199	EX1000	300/60	£530
<b>24 PIN DOT MATRIX</b>			KXP 1540	288/65	£400	MSP45	240/40	£239	DFX5000	533/400	£1087
STAR LC24-10	200/67	£189	<b>LASER PRINTERS</b>			MSP50	300/60	£285	LQ400	180/60	£189
STAR LC24-15	200/67	£319	KXP 4450 ★	11PPM	£1269	MSP55	300/60	£399	LQ550	180/60	£255
STAR XB24-10 ★	240/80	£375	<b>ON-SITE MAINTENANCE</b>			<b>24 PIN DOT MATRIX</b>			LQ850	264/88	£394
STAR XB24-15 ★	240/80	£495	£5.00 for 12 Months on-site warranty on any Citizen, Star, Panasonic, Hyundai, Olivetti, Mannesmann-Tally or Akhter Dot Matrix Printer. Call for details.			HQP 40	200/65	£259	LQ1050	264/88	£543
<b>LASER PRINTERS</b>						SWIFT 24	160/60	£245	LQ860	290/88	£499
STAR LASER 8 ★	8PPM	£1198				<b>LASER PRINTERS</b>			LQ1060	290/88	£639
STAR LASER 8DB ★	D/BIN	£1685				OVERTURE 106	6PPM	£930	LQ2550	400/133	£831
★ = includes On-Site Maintenance						OVERTURE 112	12PPM	£1289	TLQ4800	250/83	£1437
									SQ850	600/198	£575
									SQ2550	600/198	£863

2 metre IBM Parallel Printer Cable £6.00 each

HEWLETT PACKARD			OLIVETTI			CANON			MORE LASERS		
MODEL	SPEED	PRICE	MODEL	SPEED	PRICE	MODEL	SPEED	PRICE	MODEL	SPEED	PRICE
THINK JET		£254	DM100SPR	200/30	£123	CANON LBP4	4PPM	£895	Epson GQ5000	6PPM	£1119
QUIET JET		£334	DM105SPR Colour	200/30	£154	CANON LBP8 III	8PPM	£1390	MT905	6PPM	£889
QUIET JET +		£398	DM282	240/40	£216	CANON LBP8 IIIT	Dual Bin	£1815	SHARP JX-9300	6PPM	£1063
DESK JET		£434	DM282S	240/40	£245	CANON LBP8 IIIR	Duplex	£1923	KYOCERA F1000	10PPM	£1459
DESK JET +		£519	DM292S 136 col	240/40	£307	CANON BJ-130	220/110	£539	KYOCERA F1200	10PPM	£2369
PAINT JET		£644	DM250	240/60	£402	CANON IX-12 Image Scanner		£374	KYOCERA F2200S	10PPM	£2569
RUGGED WRITER		£849	DM250L 136 col	240/60	£458	CANON IX-12F Image Scanner		£752	KYOCERA P2000	10PPM	£3969
<b>LASER PRINTERS</b>			DM400 136 col	400/100	£867	CANON IX-31F Scanner Int/face		£113	BROTHER HL-8e	8PPM	£1369
LASER JET IIP	4PPM	£879	DM704 136 col	400/100	£1053	CANON OCR Software		£304	BROTHER HL-8D	8PPM	£2189
LASER JET II	8PPM	£1248	DM309	360/66	£269				BROTHER HL-8PS	8PPM	£2524
LASER JET IID	8PPM	£1879	DM309L 136 col	360/66	£356				BROTHER HL-8QS	8PPM	£2929
All HP's include On-Site Maintenance.			<b>LASER PRINTERS</b>						<b>LASER TONERS</b>		
			PG 306 ★	6PPM	£899				Canon SX Toner £59, Panasonic £32,		
			PG 208 ★	8PPM	£1199				MT905 £24, Epson GQ3500/5000 £16,		
			PG 303 ★ Postscript	8PPM	£2595				Kyocera 2 pack £69, Citizen £22.		

RIBBONS DISKETTES CABLES DUST COVERS MUFLERS TAPE STREAMERS CONSUMABLES

FACSIMILE		BARGAIN BASEMENT	
AMSTRAD FX9600T	£529 + VAT	MODEL	SPEC PRICE
<b>KEY FEATURES</b>		<b>9 PIN DOT MATRIX PRINTERS</b>	
CCITT Group 3 Compatible.		MT81 10"	120/25 £99
Full Featured Integrated Telephone		Hyundai-910 10"	216/37 £128
20 Page Automatic Document Feeder		Hyundai-920 15"	216/37 £199
Automatic Cutter that cuts copies to the length of the original.		ACL 135 10"	135/27 £119
Local Copying Facility		ACL 480 10"	480/55 £299
Separate fax & phone auto-dialling allowing up to 50 fax numbers to be stored.		ACL 700 15"	480/55 £399
Unique Mercury Compatible		<b>18 PIN DOT MATRIX PRINTERS</b>	
Special 16-shade half tone feature		Hyundai 1810 10"	240/100 £229
Built-in parallel port (Paperless transmit)		Hyundai 1820 15"	240/100 £299
Signature capture feature		<b>CONSUMABLES</b>	
<b>CAD CORNER</b>		PAPER	
MODEL	PRICE	11" x 9.5" 2000 sheet 1 part	£14.00
<b>PLOTTERS</b>		11" x 9.5" 1000 sheet Letter Qual.	£10.00
Hitachi 681-A4/A3	400mm/sec £559	11" x 14.5" 2000 sheet music	£19.95
Hitachi 673-A4/A3	400mm/sec £699	<b>FLOPPY DISCS (Boxed in 10's)</b>	
Hitachi 674 A1/A4	400mm/sec £2699	3M 3.5" SS/DD 135 TPI	£9.95
All above plotters have on-site replace.		3M 3.5" DS/DD 135 TPI	£12.95
<b>DIGITIZERS</b>		3M 3.5" DS/HD 135 TPI	£27.49
Hitachi from 11" x 12" to 44" x 60"	CALL	3M 5.25" DS/DD 48 TPI	£8.00
Full range of pens, paper, stylus, cursors.		3M 5.25" DS/QD 96 TPI	£12.00
<b>Stockists for Pentel</b>		3M 5.25" DS/HD 1.6 MB	£14.00
<b>HITACHI MONITORS</b>		RIBBONS	BLACK COLOUR
CM1686A1 16" 1024 x 768 50 Khz	£1199	STAR	
CM1686A3 16" 1280 x 1024 64Khz	£1299	LC10	£3.50 £5.50
Hi-Scan 20" VGA 1280 x 1024	£1724	LC24-10	£4.50
CM2086A3 20" 1280 x 1024 64Khz	£1783	LC24-15	£4.50
ULTRA 21" 1280 x 1024 64Khz	£1895	FR10/15	£6.00 £12.00
		XB24-10/15	£6.00 £12.00
		CITIZEN	
		120D/180E	£3.25
		MSP15/45/55	£6.50 £17.50
		HQP40	£7.50 £18.00
		SWIFT24	£4.00 £14.50
		EPSON	
		LX400/800FX850	£4.50
		Massive stocks of other Manufacturers. Call	

## ULTIMATE BUSINESS MACHINES LTD

5 Water Street,

Earby, Colne,

Lancashire, BB8 6QP

SALES HOTLINE (0282) 843001

VISA...ACCESS

### TERMS:

All prices exclude VAT & Carriage.

Strict cash with order only.

Visa, Access, PO or Cheques accepted.

Official orders accepted from Government, Education and substantial PLC's.

### DELIVERY UK MAINLAND

PRODUCT	NEXT DAY	4 DAYS
HARDWARE	£16.00 + VAT	£10.00 + VAT
SOFTWARE	£10.00 + VAT	£8.00 + VAT
CONSUMABLES	£5.00 Post & Packing + VAT	

Callbox is for everyone who uses a telephone and a PC. The software/hardware combination controls multiple phonebooks, alarms, call-logging, different cost centres and much more. Fully B.T. Approved, ideal for solicitors, accountants, sales forces etc. Only £169.00 + VAT.



423161 daytime only. 32733 eve.

**WANTED:** Amiga 500, must include at least a modulator, games and manual(s) offer around £250. Tel: Chris (03552) 39613, evenings or all day Sunday.

**ATARI** ST wanted including software and joystick. Must live near Peterborough. Ring (0733) 43474 after 4.00pm each day. Prepared to pay up to £200.

**SUPER** ROM for Tandy 100 also spreadsheet for Psion Organiser. Tel: Roger 0702 467881 after 6pm.

**WANTED** original Apple II+ manual/s in good condition. Tel: 0302 782722.

**DOES** a football pools forecasting program exist IBM compatible. Contact Chris 0332 383850 ext. 4267 office hours. 0332 559207 home.

**EPSON** LX80 sheet feed or tractor feed wanted. Phone Oundle 0832 280535.

**WANTED** PC compatible 5 1/4" disk drive - good working order but must be cheap. 051 606 0644.

**WANTED:** Role playing games for C64; Might and Magic, Wizardry two and three, Phantasie one, and any other difficult to find American originals. Roland 01 250 1910.

**WANTED!** Atari 1050 Disk Drive for spares. Also ROM Cartridges for XL/XE, pay cash or software. Dave, 8 Carfield, Skelmersdale, WN8 9DL. Tel: 0695 32818.

**SWAP** Batman, Barbarian II, Kick Off, Populous, Ballistix, Dungeon Master, Gauntlet II, Street Fighter, & others for D/S external drive or other hardware. Phone Dave 0249 890139.

**HAS** anyone got Arcade games for sale for MSX machines? Do you want any swaps or tips then write Ian, 6 Naseby Close, Westwood, P'Boro, PE3 7DE.

**WANTED** Amstrad DDI 3" disc drive complete, good condition, pay up to £60. Phone 061 (Manchester) 338 3923.

**WANTED** IBM comp PC, CGA, EGA, monitor etc. Will pay postage, carriage - £350 or less. Gordon Mackie, 100 Cartmore Road, L/gelly, Fife, KY5 9NX.

**SWAP** Miracle Technology WS4000 modem for copy of Director and Tool Kit or second drive for Amiga. Phone 01 550 4416 after 6pm.

**ANY** games for the MSX on cartridge or CD or tape and CD? Games for the Pioneer MSX computer plus any games or Public Domain demos on Amiga. Contact:- 0322 341648.

**WANTED** issue 5 of a PCW magazine called "8000 Plus" Phone Phil (0923 775787) after 8pm or weekends.

**BOARD** games on Amiga wanted. Any bargains to offer a poor beginner. Open to information on other types of games. Tel: 0274 306028.

**WANTED** CPC Firmware manual (Soft 968). Pay any reasonable price & P & P. Write to: Colin Barrow, 72 Pladda Avenue, Irvine, Ayrshire, Scotland, KA11 1DE.

**HELP!** Wanted Amiga A500 Keyboard. Mine is damaged beyond repair. Also top cover, can anyone help? Also Amiga contacts. Tel: 0284 705448.

**SWAP** C64 lightgun and games for cartridge or joysticks or software including Microprose Soccer (tapes) or W.H.Y. Nick 55, Hawthorn Crescent, Arnold Nottingham, NG5 8BE.

**ST** adventure swap. Mine - Fish/Kult/Lurk-

ing Horror/Shadowgate/Uninvited/. Yours- Personal Nightmare/Space Quest 3/ Manhunter. Originals! Write Saurav, 8 Wellington Road, London,

**DRAGON** 32 keyboard (or complete unit) in working order. Reasonable price paid. Tel: 0747 824372 after 6pm.

**MSX** cassette or cartridge based wordprocessor for Toshiba HX10. Reasonable price paid. Tel: 0747 824372 after 6pm.

**MODEM** wanted for 48K Spectrum. Write Barry Brogan, PO Box 2695, Canberra, ACT 2601, Australia.

**ATARI** XE, wanted games, cartridges or cassettes, any considered. Please send list, Will pay postage both ways. Phone 0255/553643 evenings.

**ANYONE** got pokes for CPC disk version of Strider or Rambo III. Please send to Carl Surry, 37 Fairfield Way, Barnet, Herts, EN5 2BQ. Thanks.

**AMIGA** 3.5-inch external disk drive wanted immediately (720K). Willing to pay up to £45. Also TV modulator wanted. Phone Ackeel on 01-701 0739 after 7pm.

**FAULTY** printer wanted, most makes considered, any size or condition. Good price paid. Tel: 0633 254656.

**CPC** disk swap. Have Trivial Pursuit Mar-sport. Want Tasword 6128. Qualitas, Interface 2, or offers. Please contact Tim Holyoake at: Tythe Farm Cottage, Peatling Magna, LE8 3UP.

**WANTED!** Guru number spotter seeks and any naff, quirky, or damaged programs to complete collection. Tel South Uist: 376400.

## ● HELP OFFERED

**"DUNGEON Master"**, any problem, any level. Completed 7 times! ST/Amiga. Will assist any way I can. Please phone (most evenings 7-10pm) (Weekends) Mike: 0743 249094. (Also SSI's - "Rings of Ilfin" and "Sword of Sodan").

**AMIGA** contacts wanted. Any experience level. Workbench/CLI etc, help offered if needed. Keith Lee, Security Squadron, RAF Marham, Kings Lynn, Norfolk, PE33 9NP. 100% fast replies.

**ANYONE** with PC hardware/software compatibility problems or having trouble deciding which PC compatible to buy. Call Paul on 061-962 7934, evenings. Completely free service!

**BEEB** help offered, including BCPL Basic and machine code. Write to Owen Astley, Dunelm, Durham Moor, Durham City, DH1 5EU. No SAE, no reply

**COMPUTER** freak offers help with any BBC B problems, however complex, also on use of DEC VAX 8800 in DCL, Pascal, ADA. S.A.E. to T.F.T., 5 Riversdale, Gilsland, Cumbria. Also 6502 work undertaken.

**DO** you need programs written on the Amstrad CPC range? Write to me now! Keith Grimsditch, 12 Reddish Vale Road, Reddish, Stockport, SY5 7HE. The sooner the better!

**HELP** given on Indy Jones the Adventure, also Dungeon Master. Please phone Paul on 0222 567596. Hi to the Pompey Pirates keep up the good work.

**I** can help with spares for Amstrad Commodore Sinclair computers, also TV and Video recorders. Can anyone help new Amiga operator? Ring Paul on 0332 760353.

**MIMI** 802 help! Erased system disc please phone 0737 823498 ask for Stupid John.

**SOMEONE** who can video digitise photos, mags etc..... will gladly sound sample anything they want done - write now! To: Neil Mansell, 53 St Marks Road, Canvey Island, Essex, S58 9NJ - don't delay!

**STUDENT** offers help with all aspects of MS-DOS, including Batch Files and Pipes/Filters. Send Query to: N Stubbs, 6 Lindrum Ave, Lyme Green, Macclesfield, SK11 0LG

**TO** all Pascal programmers: If you have any problems or just want to write something. Send me a letter and I will try to help you! To: Sioe-Lin Kwik, Richmond College, Queensroad, Richmond, Surrey, TW10 6JP.

**TO** PCW beginners. Locoscript, Newsdesk International. SAE to: John Peters, 299 Southway Drive, Southway, Plymouth, Devon, PL1 6QN. Share a problem, find an answer!

**WANT** help with any Amiga Software? Contact Pete, 15 Milford Close, Tonteg, Mid Glam, S. Wales, CF38 1HG.

**WORD-PROCESSOR**, keyboard, letter quality printer, in good condition, no games, with manual. Tel: 0904 490621 after 6.30.

**WANTED** C64 tape Matchday (one), any football or utils tape. Tel: 0772 791470.

## ● OTHER

**CPC** free newsletter. Just send a 10 x 7 stamped addressed envelope or 30p to cover costs, to: - Carl Surry, 37 Fairfield Way, Barnet, Herts, EN5 2BQ.

## ● PEN PALS

**AMIGA** contacts wanted. Only Ultra-fast 100% reliable contacts need apply. Write to Mark, 21 Loretto Park, Friars Walk, Cork 4, Ireland. Disks get priority.

**AMIGA** contacts wanted guaranteed reply. Write to 'Fletch', 152 Kingsley Road, Kingswinford, West Midlands DY6 9RP. Enclose list and/or disks. Interested in music demos.

**AMIGA** contacts wanted for P.D games, demos utils 100% reply. Send lists, disk, Richie Collins, 2 Glebe Street, Castleford, W Yorks WF10 4AJ.

**AMIGA** contacts wanted, especially overseas. All demo coders and musicians needed. Write to: Simon, March House, Two Dells Lane, Ashley Green, Chesham, Bucks HP5 3PN.

**AMIGA** contacts wanted to swap latest stuff. Send disks, lists to 15 Illshaw Close, Winyates Green, Redditch, Worcs B98 0QY. 100% reply. Greets to Excel UK.

**AMIGA** contacts wanted, 100% reply. All welcome write to: Ken, 9 Mosquito Crescent, St Eval, Wadebridge, Cornwall PL27 7TN.

**FAST** Amiga swappers contacts needed. Plenty to swap with 1/2 meg only. Contact me S Singh, 39 Marlborough Gardens, Newbridge, Tettenhall, Wolverhampton WV6 0LU. Phone 0902 758826.

**AMIGA** contacts must be fast. Write to Paul Hollyfarm, OrmskirK Road, Bickerstaffe, Lancs L39 0HO. Hi to spreader protocol and new Aye.

**AMIGA** contacts wanted to swap hints, tips, games and latest stuff. Send disks. Rapid 100% reply to Nigel, Flat Three, 3 Fairmile, Henley, S- Oxon RG9 2JR.

**AMIGA** contacts wanted preferably Yorks or Lancs. No lammers please. Hi to Sentinel. Write with lists to Tony, 3 Bowman Close, Sheffield, S12 3LR.

**AMIGA** contacts wanted 100% reply. Must be fast. Write to Mark, 17 Rocklands Drive, Sutton Coldfield, West Mids B75 6SP.

**ST** penpal for new ST user, I need some games!! Single sided owners please! Gary Mears, 46 Drovers Croft, Greenleys, Milton Keynes, NK12 6AN. Tel 0908 220486.

**AMIGA** contacts? Look no further! Send today with list or disks. Yo, Pendle Europa, Interceptor, Jude, Preddy, Gen and everyone else! Write to Andy, 3 Cullin Tce, Inchture, Perthshire, Scotland PH14 9RZ.

**AMIGA** contacts wanted: Send lists, disks to: Phil, 6 Farrows Close, Chevington, Bury St Edmunds, Suffolk IP29 5QJ. 100% reply on all. 48 hrs answers. No rubbish ok!

**C64** Pen Pals wanted, any age, male or female; to swap ideas, hints, tips etc. Tapes or discs to R. Forbes, 51 Davidson Way, Knightsridge, Livingston.

## ● BULLETIN BOARDS

**BATH** BBS the only Multiline "Atari" based board in the U.K. Call 0225 835841/840060 8N1 V21/23/22/22BIS the best Atari board in the west!

**25,000** pages of tele software, chat, help, news, views and reviews, on the Gnome At Home BBS, V23, 24 hrs. Tel: 01 888 8894. It's an experience..... but then so is death.

**0226** 340425 24hrs View data BBS. Log on to this professional looking system and enjoy!

**AMIGA** south east BBS, V22, V22BIS for Amiga, ST, PC and whatever computer you own. 19.00-08.00 weekdays, 14.00-08.00 weekends only. Tel: 0293 228464

**BB USERS, SYSOPS.** I am in the process of setting my own BB up and want contacts. Write to Gary, The Cottage, Church Road, Fundenhall, Norwich, Norfolk NR16 1EJ.

**CALL** the brilliant Phantom Viewdata on (0226) 340425, V23v, 24 hours.

**GNOMES**, Toadstools, chat, help and tele software. All this and much (much) more on the Gnome at Home BBS, 01-888-8894. V23. 24hrs. UData. Be there or be square!!!

**HALFWITS** BBS. Now on line from noon until midnight weekdays and all weekend. Includes Framework, where you could finance next quarter's telephone bill! 2400/1200. 0272 340310.

**PROBLEMS** with Comms - Write now to Martin Carter, Unit One, 13 Bear Lane, Southwark, London, SE1 0UH with hardware and software details and your address.

**CPC** folk out there Hello!, will swap multi-face pokes or help a bit with Nemesis Bonzo Meddlers. Carl Surry, 37 Fairfield Way, Barnet, Herts, EN5 2BQ.

**KATS** BBS now on line, Call 01-848-1685 after 10pm Friday, Saturday and Sunday. V21/22/22Bis. All calls welcome.

**SHEFFIELD'S** alternative solution BBS. (0742) 325232, V21/22/23/22Bis, 8N1, 24hrs. Atari, IBM, Amiga, BBC downloads, online games, messages etc. All Welcome. No fees! Node #1022.

**CALL** Blitter BBS, the Amiga only board, 8pm to 8am weekdays and 5pm to 8am weekends. 0292 671638 all Baud Rates from 300 to 2400.



SALE ★ SALE ★ SALE ★ SALE

FREE

CAR

PHONE


**WITH EVERY ORDER  
OVER £100**

**LOCKABLE STORAGE BOXES AND DISKS****3.5" Disks and Boxes**

25 x 3.5" DSDD with 40 cap lockable box	£18.95
50 x 3.5" DSDD with 80 cap lockable box	£38.95
75 x 3.5" DSDD with 80 cap lockable box	£47.95
100 x 3.5" DSDD with labels - no box	£57.95

**5.25" Disks and Boxes**

25 x 5.25" 96tpi disks with 60 cap lockable box	£11.50
50 x 5.25" 96tpi disks with 60 cap lockable box	£14.95
100 x 5.25" 96tpi disks with 100 cap lockable box	£26.95

**0262 679640****BARGAINS**

5 1/4 x 80 cap non lock disk box	£6.59
5 1/4 x 10 cap library case	£1.15
Atari ST replacement mice with mat and bracket	£24.95
10 cap disk rack with desk tidy	£4.95
80 col wire printer stand	£6.95

**ACCESSORIES**

Mouse mats .....	£3.49
Mouse brackets .....	£3.49
4 player cables Amiga or Atari .....	£3.95
Atari J/s - mouse ext. cable .....	£3.95
Cleaning kits 3" - 3 1/2" - 5 1/4" .....	£2.95
Designer joystick .....	£6.95
Sureshot joystick .....	£6.95

All disks are fully certified and guaranteed,  
supplied with user kits and sleeves

Same day despatch

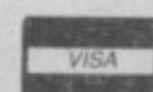
All prices include VAT and Track Back delivery -  
for overnight delivery please add £5 per order

\* Subject to fitting by  
Phonetech Communicating, Peterborough.

**F.M. Computer Supplies**

Lancaster House,  
Lancaster Road, Carnaby  
Industrial Estate, Bridlington,  
N. Humberside. YO15 3QY.

Fax: 0262 602620



SALE ★ SALE ★ SALE ★ SALE

SALE ★ SALE ★ SALE ★ SALE ★ SALE ★ SALE ★ SALE ★ SALE

SALE ★ SALE ★ SALE ★ SALE ★ SALE ★ SALE ★ SALE ★ SALE



**IS YOUR COMPANY PART OF IT?**

Would you like to be able to do the following,  
all from the "comfort" of your office,  
and at a VERY small cost.

Contact Head Office in a split second with masses of information. Advertise to over 300,000 potential customers. Allow customers to order products over their computer to arrive at your office in a few seconds. Display pages of information about your various products. Contact any of your potential or existing customers/clients in no time at all, and with no cost for stamps etc.

The list of facilities that you can do on British Telecom's Prestel service is endless, and now it's within the reach of everyone, just think of all the information you can display and update immediately at a few pence a day.

Give Carl Wright a ring on 0603 501633 if you are interested in becoming a Prestel Sub IP, or write for written details to the address below:

DDP

10 Gould Road, Norwich, Norfolk, NR2 3QH

Fax: 0603 250689

Prestel: 011155079/011158594. BT Gold 74:MIK2380

**★ DYNAMIC OFFER ★**

**Amiga 500 512k MEMORY EXPANSION**

★ on/off switch ★ high quality ★ installed in seconds ★ fast efficient service

**ONLY £55!**

Please send your cheque (+£1 p&p) to:

**SPEED COMPUTERS LTD,**

41 Weymede, Byfleet, Weybridge, Surrey, KT14 7DQ

Tel: 09323 52277 (24 hours)

**AMIGA 500 REPAIRS & SPARES****SPARES:**

68000 MPV .....	£23.00	5719 Gary .....	£12.00
8362 Denise .....	£19.00	8364 Paula .....	£29.00
8371 Fat Agnus .....	£32.00	8520 .....	£10.00
ROM V1.2 .....	£21.00	MSM6242 Clock .....	£8.00
Service Manual .....	£22.00		

**ACCESSORIES**

A520 Modulator .....	£26.00	SCART Lead .....	£16.00
A501 1/2 Meg .....	£140.00	Serial Lead .....	£13.00
A1010 D-Drive .....	£140.00	Parallel Lead .....	£13.00

A500 Fixed Price repair .....

3 months warranty. Sinclair & Amstrad also repaired.

**ACE Repairs, Outways Farm, Pelynt, Looe,  
Cornwall PL13 2NW**

**(0503) 20282**

**OLD AND DISUSED SOFTWARE**

Cash paid for any software (tapes - discs - cartridges)

For all makes of machine

SAE: For details or send software for full quote

**INTERNATIONAL SOFTWARE GROUP**

104 Church Street, Stoke-on-Trent, Staffs.

Tel: 0782 747174

**GOT AN ST OR STE**

If yes then why not buy P.D. from us.  
Free catalogue with STOS, Budgie &  
P.D. sections. From 95p a disc.

**Paradise Computers**

**Britain's fastest growing P.D. company.**

**S.A.E. to: Paradise Computers**

**Catalogue Dept.,**

**9 Westfield Crescent, Brighton BN1 8JB**

**J  
U  
P  
I  
T  
E  
R**

**COMPLETE WORDPROCESSOR SYSTEM**

**SANYO 550 Computer MS DOS**

Single drive with Wordstar  
and Calcstar Software  
**PHILIPS 12" Amber Screen Monitor**  
**ACL 135 Dot Matrix Printer**  
**TRADE PRICE ONLY**

**£299**

+ VAT

Why buy a typewriter?

**TRADE PRICE**

All trade prices  
exclude VAT  
24 hour  
answerphone  
Out of hours call  
Open Mon-Fri  
0900-1800

**JUPITER PRODUCTS LTD**

**0279 635688**

Old Pang Building, Perry Road,  
Harlow, Essex.

Call for an appointment

**FREE**  
Get a second  
360K disk  
drive while  
stocks last!

**P  
R  
O  
D  
U  
C  
T  
S**

**SPECTRUM  
UTILITIES  
USEFUL &**

**"OUTLET!"**

**GRAPHICS  
INFO AND  
IDEAS!!**

**INTERESTING HOMEGROWN SOFTWARE!!**  
Monthly since 1987 - now on ALL of the popular SPECTRUM systems!

**SPECIAL OFFER** - First-time buyers send only £2.50 for the latest issue on.....

**PLUS 3 DISC, DISCIPLE/PLUS D,  
OPUS, MICRODRIVE OR TAPE!!**

Chevron Software, 605 Loughborough Rd., Birstall, Leicester, LE4 4NJ

**McInker™, Automatic Ribbon Re-inker**

£49.95



will re-ink your ribbons for less than 5 pence and will pay for itself even in one day depending on printer use. Average cartridge can be re-inked 60-100 times. We support over 1200 printers, cartridges, spools, multicolour cartridges.

Ask for complete catalogue.

**Universal McInker (cartridge or spool) .....**

**Multicolour Adaptor (4 colour ribbons) .....**

**Dot Matrix Ink (2oz £3.00, 1 pint £18.50 any colour)**

**IMAGEWRITER SPECIAL .....**

100,000 sold since 1982. Prices exclude p&p/VAT

**MGA SOFTCAT 0797-226601**

**ALL COMPUTER HARDWARE AND**

**SOFTWARE WANTED FOR CASH**

**OR EXCHANGE**

**NOTHING REFUSED!!**

**01 727 0424**

*when was the last time your mail order put a smile on your face?*

Why is it our many customers praise our excellent service and continue to shop with us? Probably because our great prices help. We offer the best in mail order with a service that is beyond comprehension. 3.5" High grade Verbatim/Sony bulk disks: £15.80 - 20, £23.80 - 30, £36.80 - 50, £70.00 - 100, 3.5 Std. 720K (Kao) bulk disks: £6.90 - 10, £13.50 - 20, £20.10 - 30, £31.40 - 50, £55.99 - 100, 10 Sony/Verbatim/TDK (with free disk) /Dysan DS/DD Branded boxed: £11.50 Inc. 3.5 80 capacity diskblank: £6.50 (please add £2.50 to cover P&P if not ordering disks). 30 3.5 high grade disks with 80 cap. box: £30.99. 50 3.5 disks with 80 cap. box: £39.99. 5.25 disks: £3.70 - 10, £7.20 - 20, £15.00 - 50, £28.00 - 100. Soft mouse mats: £3.60. Mouse houses: £2.90. Twin Joystick extenders: £4.80. Dust covers (Atari ST): £3.90. Midi (10ft) cables: £3.60. Epson (2454 in) ribbons: £2.70. Cumana 3.5 1 Mb external drive: £87.95. Triangle 3.5 1Mb external drive: £86.95. Hybrid Arts FM Melody Maker £68.95. C-Lab Creator: £260.00. Mastertracks Pro: £270.00. Phone for pricing on further music products. Atari 520STFM Power Pack: £348.00. Atari 520 explorer: £269.00. Atari 1040 business pack: £438.00. Atari mega 1 professional pack: £529.00 (with SM124: £610.00). Mega 2 professional pack with monitor: £898.00. Mega laserpack: £1580.00. All Atari's include the "Hyperpack" for a limited period only. Phone for best Amiga Pricing. Atari megafile 30Mb HardDisk: £449.00. Vortex 40Mb: £499.00. Star LC10 Printer: £168.00. Seikosha SP 180: £139.00. Epson LX400: £179.00. Cameron B&W handy scanner type 2: £195.00. Vidi ST: £96.00. Many more products can be obtained for you, all brand new.

**PUBLIC DOMAIN DISKS FROM £1.60. SEND £1.00 FOR DISK CATALOGUE OR AN S.A.E. DISK.** It is our policy to offer the best pricing and service to our current and new customers, so where possible we will offer you the best price if that is what you want. If it isn't listed above, that does not mean we cannot get it, please phone and ask for Paul. If we don't advertise in the latest edition of this magazine, then it doesn't mean we are not here. Just pick up your phone. Personal calls until 12 midnight. All above prices include VAT and P&P with 3 day delivery (next day add £6.00) and come complete with our no nonsense warranties. All trade and government welcome. Best ever prices on all your hardware/software requirements not listed above. Send large SAE for prices. Overseas add 20% to total cost to cover shipping. Phone Paul now or send in with Cheque/PO/Citibank or Access/Visa/Connect your order (usual details) for immediate despatch to:



joy of life arts, (NCE), 45 elswick, skelmersdale, lancashire,  
wn8 6bx. telephone: 0695 32382 (24 hrs).

VISA



## KAD-SOFT U.K. PUBLIC DOMAIN LIBRARY

Over 300 PD disks now in stock. We are now also an official Budgie U.K. Licensee and hold their full range in stock. Please ring for free catalogue.

### SPECIAL OFFERS

3 1/2" disks - 135TPI DSDD - 1 meg Unformatted  
880K formatted

10 - £6.80. 20 - £12.85. 50 - £27.00. 100 - £55.00.

5 1/4 96TPI

10 - £3.25. 25 - £7.00. 50 - £13.50. 100 - £26.00.

All disks are very high quality. 100% certified error free - no quibble money back guarantee. Prices include P&P, VAT. Labels, Sleeves, where applicable.

### DISK BOXES

40 CAPACITY - £4.00. 50 CAPACITY - £4.80. 80 CAPACITY - £5.50  
MOUSE MATS - £4.25. MOUSE HOUSES - £4.25

PLEASE CALL FOR A FULL LIST - KAD-SOFT  
2 EBOR PADDOCK, CALNE, WILTS, SN11, 0JY  
TEL: 0249 817174

## AMIABLE PUBLIC DOMAIN

105 Denmark Square, Aldershot, Hampshire, GU12 4TP. Tel: 0252-23738

Over 600 disks, virus free, all The Popular collections from  
less than £2.00 per disk.

FOR  
AMIGAS

Send £1.00 or blank disk and  
return postage & packaging for  
disk catalogue & virus killer.

FOR  
AMIGAS

Cheque and postal orders to D.Burns.

## AMIGA 512K MEMORY UPGRADE CARD

STOP  
PRESS!

More software becoming  
available which needs  
1 Meg of memory

Make sure you have your 1 Meg available by purchasing the best  
upgrade board available.

Features: ✕ Includes clock.  
✕ On/Off switch.  
✕ Compact - uses only 4 RAM, I/C.  
✕ Easy to fit.

UNREPEATABLE OFFER

£54.95  
inc. carriage

Send cheques/Postal orders to:

Bedford Components, Unit 48, Tyne Road,  
Sandy, Beds. SG19 1SA.

Tel: 0767 81760

**THE ULTIMATE SERVICE.**  
**JUST RING 0898 36 24 36.**  
**DARE YOU LISTEN?**

(25p/38p per min)

**YOU SAW THIS SPACE!**  
**So Do 24,637 other**  
**prospective buyers**  
**every week!**  
**To find out how this**  
**space could work for you,**  
**CALL SIMON MOSS ON**  
**(0225) 442244**

## DIRECT DISKS

3 1/2 DISKS 135 TPI DSDD WITH LABELS  
LIFE TIME GUARANTEE  
100% ERROR FREE

CHEQUES/PO  
MADE  
PAYABLE TO  
DIRECT DISKS

£6.75

FOR 10  
INC VAT & FREE  
DELIVERY IN UK

DIRECT DISKS  
60 BURNSIDE DR  
BRAMCOTE  
HILLS  
BEESTON  
NOTTINGHAM  
NG9 3EE

## REPAIRS

★ C64 SPECIALIST ★

Make sure of getting the best deal available.  
Phone Ken: 051 298 1034 (1-4pm Mon-Thurs).

MAW ELECTRONICS

## EXPRESS COMPUTERS

SPECIALISTS IN SECOND USER IBM  
COMPATIBLE COMPUTERS & EQUIPMENT

- PRINTERS ● PERIPHERALS ●
- HARD DISKS ● COMPONENTS ●
- NETWORK INSTALLATIONS ●
- MAINTENANCE ●

CALL NOW FOR YOUR BEST POSSIBLE DEAL  
PLEASE CONTACT ANDREW OR CHRIS

**(0604) 35519**

COMPUTERS & HARDWARE ALSO  
PURCHASED FOR CASH

## COMPUTER REPAIRS

Specialists in Home and Business Computers, all makes repaired.  
ATARI, AMSTRAD, COMMODORE, SPECTRUM, SINCLAIR etc.

Atari Approved Service Centre.

We also repair Printers, Monitors, Disk Drives etc.  
FREE estimates, all work fully guaranteed.

A.M.C., UNIT 4, WESTON ROAD INDUSTRIAL ESTATE,  
STRATFORD-UPON-AVON, WARCS, CV37 0AH  
0789 292269

## Z VIDEO PRODUCTS

Amiga & ST digitising service

We can supply you with digitised pictures of your choice.

100's of pictures covering 1000's of subjects, films, wildlife etc.

Orders despatched within 24 hours.

Free slide show utility on every disk.

Send S.A.E. for info sheet or £2.50 for demo disk.

We can digitise Amiga pictures in these formats. Ham, high res, low  
res, half bright with either interlace or overscan if required.

Also PD Amiga/ST.

### JUST IN - Remember Freddy?

He's back, Nightmare on Elm Street IV  
Graphics & Sound £3.00  
Amiga 22 pictures from £2.50  
Atari/ST 22 pictures from £2.50  
Ghostbusters II Demo £3.00

### Z VIDEO PRODUCTS

1 Saint Michael's  
Road, Paignton,  
Devon, TQ4 5LL  
Tel: 0803 663800

Make cheques and postal orders payable to Z Video Products



# EXPRESS DELIVERY

SUBSCRIBE NOW to Britain's biggest and best  
computer weekly!

AND GET 54 ISSUES FOR £34.95

PACKED  
WITH  
BARGAINS



Fill in the form below including your credit card number, or send it with a cheque, made out to Future Publishing to:

Express Subscriptions, The Old Barn, Somerton, Somerset TA11 7PY

NAME .....

ADDRESS .....

TELEPHONE NUMBER .....

ACCESS/VISA NUMBER .....



## ● USER GROUPS

**PC** engine and/or megadrive owner? Send S.A.E. for more information or £1 for latest newsletter: Onn Lee, 125 Arnold Road, Bestwood Estate, Nottingham, NG5 5HR.

**ANYONE** else interested in starting an Atari ST User's Group in the Kingston, Surrey area? Contact: John, 49 Haylett Gardens, Surbiton Crescent, Kingston, Surrey, KT1 2ER.

**HELLO** to members of The Crystal Unicorn the best Commodore publication there is! Non-members can write for details to Dave at The Ethorpe Hotel, Gerrards Cross, Bucks, SL9 8HY. If you're an expert or beginner, into demos, pokes, disks or tapes, if you've a Commodore the C.U. is the club for you! All the best love from Heather & tribe (Leeds).

**AMIGA** penpals wanted to swap latest stuff. Only the hottest, no lamers. 100 per cent reply. Contact Warren, 74 Verdayne Avenue, Shirley, Croydon, Surrey, CR0 8TS.

**64** (Tape) not disk - users club about to start up - going global soon. Trade, Demos, comps: For details S.A.E. to: D. Mason, Ethorpe Hotel, Gerrards Cross, Bucks, SL9 8HY.

**ADVENTURE** enthusiast seeks contacts to exchange ideas etc for ST and PC games. Mr S Lucas, 47 Longcroft Lane, Cheadle Hulme, Cheshire.

**AMIGA** Contacts wanted to start FREE beginners club in the south to swap games, cheats, tips etc. Please contact David after school on 0425 279835.

**AMIGA** Contacts wanted. Write to Simon,

30 Diamond St., Saltburn, Cleveland, TS12 1EB or Call (0287) 24167.

**AMIGA** contacts wanted 100% reply fast and reliable. All welcome write to: Steve, 4 Stopgate Lane, Aintree, Liverpool L9 6AP.

**AMIGA** contacts wanted all around the world to swap latest stuff. Write to: Tariq Al-Ali, PO Box 66957, 43760 Bayan, Kuwait. 100% reply. Hi Mad M.

**AMIGA** contacts wanted for fast reliable new stuff. Send disks and letter to: 36 Friar Road, Brighton, East Sussex BN1 6NH. 100% reply. World wide and local. No lamers. Bye!

**AMIGA** contacts wanted in the Hull area. Write to A.B.B., 39 Cambeak Close, Bransholme, Hull HU7 4ES. PS What is an ST?

**AMIGA** contacts wanted to swap good games. 100% reply. Write to 1 Dewlands, Oakley, Bedford MK43 7RW. Hi to Ken in Merseyside.

**AMIGA** contacts wanted to swap latest stuff, must be fast 100% reply, send list etc. R Hadden, 17 The Rise, Norhawram, Halifax, West York. or tel (0422) 206614.

**AMIGA** contacts wanted. User Group, demo's etc. Cheats disks. List sent. Send S.A.E. to Steve Hayward, 29 Effra Road, London SW2 1BY. 100%.

**AMIGA** contacts wanted: Write to Danny, 5 Beckside North, Beverley, North Humberside HU17 0PR. Send disk or letter, 100% reply posted next day. Also Amiga cheats disk for sale £2 each.

**AMIGA** newcomer, contacts wanted, usual stuff - swap games, tips etc. Where do I get cheap disks? Write to Kev: 20 Cypress Avenue, Ellesmere Port, Cheshire LG6 2UU.

# QUANTA

The Independent QL User Group

## The Definitive Guide to SuperBASIC by Jan Jones

This highly sought after book has been reprinted by QUANTA Copies are now available for £8 plus £2 p&p from:

# QUANTA

15 Grosvenor Crescent

Grimsby

South Humberside

DN32 0QJ

Tel: 0472 349850 (answerphone)

Subscription to our group is still £14 UK, and £17 for overseas members.

Now in our SIXTH successful year.

## HAT Software

### New!! Learning to Type

A typing tutor for the young and not so young. Ladies, do you want to return to the modern office but are unsure about your keyboard skills? Brush them up at home. The kids can enjoy the "Shoot 'em up" game to improve their skills and speeds.

Only £14.95, or direct from us at £15.45 inc P & P.

Also JIGSPELL, the spelling support program, FIRST PAINT and STAGE 2, our well established graphics packages, and many more. Send for our full list.

21, Wyle Cap, Shrewsbury, SY1 1XB  
Tel: 0743 231763

## ADVENTURE HELPLINE

Do you play computer adventures? Have you ever been faced with a seemingly impossible situation?

### WE CAN HELP

Our adventure rescue team work 7 days and 7 evenings a week and will be pleased to answer your queries. We offer help with any games or any computer - so if you are tearing your hair out ring this number NOW!

**0898 338 933**

T.M.E Plc 10b Hulme Hall Road. Manchester M15 4LY

Calls charged at 25p min "cheap" rate/38p at all other times



DOUBLE  
SIDED  
DOUBLE  
DENSITY

FREE  
LABELS

Bulk 5 1/4 certified  
48 TPI disks  
complete  
packaged in tens.  
£3.13 per pack

DISK STORAGE BOXES  
40 cap 3 1/2" .....£3.50  
80 cap 3 1/2" .....£3.95

NEW!  
Mouse pockets £2.95  
Mouse mats £2.64

INC  
VAT

PRINTER  
RIBBONS  
LARGE STOCKS  
CALL FOR  
BEST PRICES

135 TPI  
100% error  
free fully  
certified

PROMPT  
DESPATCH

# 43p

EACH

Now  
available  
5 1/4"  
Disks

All prices inc VAT. Please add £3.50 post and packing per order.  
£10 for overnight delivery. All offers subject to availability.

VISA

IMMEDIATE MEDIA

11 Bakewell Road

Peterborough PE2 0XU

Telephone 0733-371-617

24 hour service

Access





### PALACE SOFTWARE

Palace Software is a division of the Palace film and video organisation. We are a publisher of high quality computer games, and are looking for key technical personnel to work in our central London offices.

Our current projects are exciting and innovative and you will work in a team environment with some of the best designers, artists and musicians in the business. We are looking for highly motivated and committed individuals with a disciplined approach to work.

#### TECHNICAL MANAGER

A technically-minded person is required to help oversee the development of high quality leisure products. You should be an ex-programmer, with practical working knowledge of 8 bit and 16 bit programming techniques. Some project management experience is desirable.

#### PROGRAMMERS

Experienced programmers are required to work on a variety of creative projects in an in-house team environment. You will have a proven track record of published work. A thorough working knowledge of 68000 and C would be ideal but significant experience on other games computers could be taken into consideration.

Please contact either:

Patricia Mitchell on 01-278 0751

Simon Birrell on 01-278 5037

or send your C.V. to

Palace Software,

The Old Forge, 7 Caledonian Road, London N1 9DX

## ARTISTS!

Take the road to: H.U.G.E animated graphics,  
good salary + profit share,  
people who won't mess you about,  
ST, Amiga or IBM PC,  
Southampton or at home.

Send demo disk to:  
Level 9 Computing  
22 Darwin Road,  
Southampton SO1 5BY.

## GRADUATING IN 1990

Do you expect to get a good university  
degree next summer, and want an interesting  
job in PC software development?

For further details contact Linda Haynes at:



### LOCOMOTIVE SOFTWARE

Allen Court, Dorking,

Surrey RH4 1YL

(0306) 740606

## ARE YOU ADEQUATELY QUALIFIED FOR THE FUTURE?



### Move across to the rewarding world of IT.

Central London College offer  
full and part time courses leading to  
internationally recognised qualifications:-

- \* C & G 424/425 Certificate in applications programming.
- \* C & G 418 Computer programming & Information processing.
- \* Evening courses in DBASE, WP, Spreadsheet analysis.
- \* Evening courses in Pascal, BASIC & COBOL.

Contact Central London College on 01 580 4596





Teque is one of the leading Software Development Houses in the U.K. We are creators of hit games such as Pac-mania, Xybots, Blasteroids, Prison, Thunderbirds, Toobin, Continental Circus, Passing Shot, Chase HQ and Laser Squad.

We are currently working on Scramble Spirits, Space Harrier II, Escape From The Planet Of The Robot Monsters, Shadow Warrior and Manchester United Football Club.

Due to internal expansion and the opening of our new London office we are looking for experienced programmers to work on 8, 16 and 32 Bit home computers and consoles.

We offer an extensive package to the right people. People interested in the positions in Rotherham please contact or send a full C.V. to Tony Kavanagh at the Rotherham address and people interested in the positions in London please contact or send a full C.V. to Dean Lester at the London address:

**Tony Kavanagh,**  
**Teque Software**  
**Development Ltd.,**  
**Teque House, Masons Yard,**  
**Downs Row, Moorgate,**  
**Rotherham,**  
**South Yorkshire, S60 2HD.**  
**Telephone: (0709) 370102**

**Dean Lester,**  
**Teque London Ltd.,**  
**2nd Floor,**  
**120-150 Hackney Road,**  
**London, E2.**  
**Telephone: 01 739 3539**

## Consult Software Limited

Consult Software Ltd. producers of "Return of the Jedi", "Vidicators" and "Dragon Spirit" require EXPERIENCED programmers coding in Z80/8086/6502/68000 to join our existing in-house team. If you can write quality games within a deadline then we want to hear from you!

Send C.V. and samples of your previous work to:

**Glenn Benson**  
**Consult Software Ltd**  
**35/36 Hamilton Square**  
**Birkenhead**  
**Merseyside**  
**L41 5BP**

Or call Glenn on 051-647 3895

## Chess Computer Appointments Ltd

**Search, Selection and Advertising Consultants**  
**Princes House, 36-40 Jermyn Street, London SW1Y 6DN**  
**Telephone: 01-439 6141**  
**Fax: 01-287 6701**

### **ANALYST PROGRAMMERS UP TO £25K ATTENTION!!**

All analyst programmers with specific experience on 'C' under DOS or Unix, or experience in OS/2 or communications.

Two major, VERY exciting projects are pipelined and requirements exist for:  
**EXPERIENCED AND GRADUATE LEVEL CANDIDATES**

**CALL NOW!**  
**01 439 6141**

# ARTIST

## JOB VACANCIES

There are a number of vacancies for talented, experienced computer artists to work on coin-op conversions and major American titles using an in-house Amiga Art System.

Basic salaries range from £7,500 to £11,500, plus a generous royalty programme to boost salaries to in excess of £20,000 OTE depending on productivity.

Accommodation in Royal Leamington Spa can be arranged.

Send some examples of your best work to **David Darling** or **Tim Miller** at:

**CodeMasters Software Co.**  
**Lower Farmhouse**  
**Stoneythorpe**  
**SOUTHAM**  
**Warwickshire**  
**CV33 0DL.**



Phone (0926) 814132, Fax (0926) 817595  
 PREVIOUS APPLICANTS ARE WELCOME TO RE-APPLY



# PAPER

Best quality wood-free - LOW DUST spec.

Type & Weight	Box	£/box
11/9.5 60gsm Fanfold Listing	2000	£13.95
11/9.5 70gsm Microperforated	2000	£15.95
11/9.5 85gsm Letter Quality	1000	£10.95
A4 Size 70gsm Microperforated	2000	£19.95
A4 Size 85gsm Letter Quality	1000	£11.95
11/9.5 NCR 2-part Plain	1000	£21.95
11/9.5 NCR 3-part Plain	700	£24.95
11/9.5 NCR 4-part Plain	500	£24.95
A5 Size 80gsm Letter Quality	1000	£11.95



**CASPELL  
COMPUTER**  
of POOLE

**ALL PRICES  
INCLUDE VAT**  
Delivery - see below

# RIBBONS

PRINTER

Amstrad	CODE No.	£
PCW8256 Fabric Longlife	2741	C
PCW8256 Colours	2741C	C
PCW8256 Multistrike Films	2741MS	B
PCW 9512 Fabric Longlife	2746	C
PCW9512 Colours	2746C	C
PCW9512 Multistrike Films	2746MS	B
DMP2000/2160/3000/3160	2482	A
DMP 4000	2426	D
LQ3500	2741LL	C

Other

Brother HP15/25/40	2696MS	B
Brother M1009/1109/1209	2412	C
Commodore MPS-803	2412	C
Canon PW1080A	2223	C
Citizen 120D/180E/LSP-10	2488	B
Citizen MSP-20/40/50	2477	C
Citizen HQP-45	2478	E
Epson FX/MX/RX-80	2273	B
Epson LX/GX-80	2454	B
Epson LQ-500	2477	C
Epson EX-800	2774	C
Juki 6100 Daisywheel	2563MS	B
NEC Pinwriter P1/P2	2254	C
NEC Pinwriter P6+/P7+	2870	D
NEC P2200	2844	C
Panasonic KX-P1081	2228	C
Panasonic KX-P1180	2904	C
Seiksha GP100	2317	B
Seiksha SL80	2741	C
Seiksha 500/550	2236	C
Shinwa CP-80	2698MS	C
Star LC-10	2861	B
Star LC-10 Colours	2869	E
Star LC24-10	2868	B
Star NL-10	2761	C

**RIBBON PRICES inc VAT & post**

		1-off	2-off	5-off
Price	Band A	£2.95	£5.75	£12.95
Price	Band B	£3.95	£7.45	£16.95
Price	Band C	£4.95	£8.95	£19.95
Price	Band D	£5.95	£10.95	£22.95
Price	Band E	£7.95	£14.95	£34.95

## RIBBON REFRESH

Our own invention - Carbon in a Can!

Simply lift off ribbon casing & apply fresh carbon to your ribbon - double its life in seconds!

One can does 20-100 ribbons

still just **£8.95**

**NOW OVER  
12000 SOLD!**

## DISKS

25 x 5.25" Branded Quality **£13.95**

50 x 5.25" Branded Quality **£24.95**

25 x 3.5" 135tpi Branded **£24.95**

50 x 3.5" 135tpi Branded **£47.95**

## LABELS

Address Labels 3.5" x 1.5" 1 or 2-across  
**£3.75** per 1000 + Carriage

## HOW TO ORDER

### DELIVERY

UK Mainland:

PAPER  
(any quantity)

3/5-day: £5.00  
24-hour: £10.00

LABELS  
(any quantity)

3/5-day: £2.50  
24-hour: £10.00

EVERYTHING  
ELSE

3/5-day: FREE  
24-hour: £10.00

Overseas: Postage at cost. Callers (of course!) FREE

Order by **FREEPOST** - Cheque/PO/Visa/Access

Caspell Computer, Dept NCE, FREEPOST, Poole, Dorset BH15 2BR

Order by **PHONE** - VISA/ACCESS WELCOME!

**(0202) 666155** (24hr)

**CALLERS WELCOME** at our Sales Centre -

Unit 2A, Sterte Ind Est, Sterte Rd, Poole

We Welcome  
**EXPRESS  
VOUCHERS**

next to the hump-  
back bridge!

**1500  
BOOKS!  
LIST 50p**

**JOIN** CMUG the best Christian Micro Users Group. S.A.E. please to CMUG, 15 Howard Street, Gloucester GL1 4US.

**JOIN** the first free national ST user club. Register now! Make the most of your ST. David Dean, 5 Alpine Drive, Hednesford, Cannock, Staffs, WJ12 5NL.

**KENT** youth computer group at the Bowen Youth Centre, Kingsnorth Road, Ashford, Kent. All makes of computer. Write to Kris for details.

**LAMER?** Want to swap software, tips, demos and form a Lamers against Lamers Society? Then contact, Faisal Patel, 73 Track Road, Batley, W. Yorks, WF17 7AB.

**LIST** the low income ST User Group for students and the unemployed send two blank disks to Marcus, 9 Days Green, Chapel Street Mary, Ipswich, Suffolk IP9 2HZ for details.

**NINTENDO** contacts wanted for swaps and setting up of User Group! Write to: Ashley Middleton, Amberley, Park Drive, Little Aston Park, Sutton Coldfield, B74 27A, 100% reply.

**PC200** user I think it's OK! Did you buy the other one? What do you think of it? Give me a ring 0432 266451 Neil.

**PCW** Users Interested in P.D. send S.A.E. to: PCW-File, 18 Sunbrow, Haslemere, Surrey GU27 2QP. The PCW-File is on Boog BBS 0252 626233, 24hrs, V21/V23. No Fees.

**READ** this now! Amiga contacts wanted to start a group or just swap stuff. Contact Phil at 52 Altofts Lodge, Drive Normanton, West Yorks WF6 2LD. No lamers!!!

**SCOTTISH** QL Users Group. Your chance to meet other QL and Thor users north of the border. Contact Alan Pemberton, 65 Lingerwood Road, Newtongrange, Midlothian, Scotland.

**SHARP** users. Sharp users club, any model. The only one left for full support. Andrew Ferguson, 11 Harcourt Close, Henley-on-Thames, Oxon, RG9 1UZ. (0491) 514850 evenings please.

**SOLIHULL**, West Midlands Atari ST User Group meet second Tuesday of every month, other machines also accepted especially ARC's and even Amiga's. Phone 0564 770132 after 6.30 ask for Richard.

**SPECTRUM** Owners Join Indug, the World's largest Spectrum Users Group. Monthly Magazine, Discounts, Support + much more. Send A5 S.A.E. for full details to INDUG, 34 Bourton Road, Gloucester.

**SPECTRUM** User Group monthly magazine hints, tips, pokes & demos. For full details send S.A.E. to Rob Tronics, 61 Doyle Road, Bolton BL3 4SA.

**ST** contacts wanted if into Agtimation or any other, then write or phone 110% reply, almost. Lee Edwards, 24 Topplan Road, Glan Conwy Clwyd, LL28 5NP tel: 0492 580447.

**ST** user: Help! I'm Australian and have just bought an ST (used to own a C64 in Oz) Anyway, I am looking for good contacts and also anyone in Bradford interested in starting a users group. Contact David Marshall, 5 Highfield Road, Five Lane Ends, Bradford, W. Yorks.

**ST** users in Bradford, I'm starting a users group, just contact Dave on: 614945 and get the most out of your ST. NO FEES!!

**TAKE** advantage of the free helpline service, get in touch with other C-64 users, etc.... Join 'Crystal Unicorn'. No fee's!!! Adam, 'Redways', Harps Hall Road, West Walton, Wisbech, Cambs. PE14 7DJ.

**THE** Computer Information Club. A Club for PCW, PC, CPC, Spec+ and Atari, producing a Newsletter with hints, tips and discover software. Contact The Editor,

345 Western Way, Letchworth, Herts.

**T199/4A** User Group. Quarterly Mag, software Libraries. Membership Secretary: Peter Walker, 24 Bacons Drive, Cuffley, Herts EN6 4DU. T199/4A lives on yet!!

### ● SERVICES

**AWESOME** demos. A free demo library. All the latest demos, graphics etc. Why pay when you can get it for free. Details: Graham 0323 896767.

**FREE** penpal service. State your interests etc. I will match you up with someone. Send SAE and photo (if poss). Steve, 8 Alwin Close, Walton Court, Aylesbury, Bucks, HP21 8RP.

**ADVICE** on cheap repairs yourself and fault finding. Tel 0908 510284 after 6.30pm free advice.

**C.VS.** letter headers, drawings etc to your specific requirements. Write with details t (all produced on good quality 9 pin printer). Carl Moss, 105 Queens Walk, South Ruislip, Middx HA4 0NW.

**S.E.S.** Exchange your ST/Amiga/PC games. Fast/Reliable service. Strictly original programs only! Send S.A.E. to: S.E.S., 29 Naunton Crescent, Cheltenham, Glos, GL53 7BD.

### ● PERSONAL

**AMIGA** contacts for serious software; write to: Kam, 34 Roundhay Mount, Leeds, LS8 4DW. 100% Next day.

**HELP!** Amiga coder needed to help write

demos, etc. Phone Evan on (0382) 542247 if you fit the bill!! Also contact us to swap latest.

**AMIGA** contacts wanted to swap hints, tips and all latest software. Help also given. Write to Gary Thomas, 16 Penrhos Avenue, Llandudno Junction, Gwynedd, North Wales.

**AMIGA** contacts wanted. No lamers. Send disks or letters to: Andy, 43 Kighton Drive, Stonygate, Leicester, LE2 3HD.

**PENPALS** wanted, 100 per cent replies guaranteed. All female STFM owners reply in full. D. Plows Junior, 7 Clare Close, Mildenhall, Suffolk, P.S. Watch the virus? on Riverdene Cat/disk.

**GAMES** programmer with no new ideas? I have the ideas! Have you the skill? If you live Tooting/Wandsworth, write: Ed, 116 Eswyn Road, Tooting, SW17 8TN.

**WANTED** contacts from anywhere, wishing to swap VHS tapes. Interested? Write to or call me: Ronnie Tucker, 17 Backmuir Road, Drumchapel, Glasgow, G15 7YQ or tel: 041 944 3638. Send list.

**AMIGA** contacts wanted, must be fast and reliable, anyone welcome. Tel: (0422) 206614 or write to: Richard, 17 The Rise, Northwram, Halifax, W. Yorks, HX3 7HQ.

**AMIGA** contacts wanted. Contact me at 10 St. Ronans Crescent, Neilstown, Clondalkin, Dublin 22, Ireland. Don't forget to send your lists, disks. 100 per cent reply.

**AMIGA** contacts wanted - anyone know of a Cobol compiler for the Amiga? Write to: Gordon McHendry, Deveron View Croft, Cairnie Huntly, Aberdeenshire AB5 5LY.

**AMIGA** owner would like contacts from S.E. London, Kent area. Please write or phone. Mr. S. Weaver, 28 Cookhill Road, Abbey Wood, London, SE2 9PB. 01-310 2757.



# PLACE AN AD FREE!

Selling an old computer?  
Need some help? Got any  
tips? Run a bulletin board?  
In charge of a user group?  
After a second-hand  
bargain? You've come to the  
right place. Just fill in the  
form to place a free  
classified advertisement in  
Shopping Express

Send your ad to:  
New Computer Express, 30  
Monmouth Street, Bath.

## READER ADS ORDER FORM

### Terms and conditions

- Sorry, NO trade ads. All reader ads must be from private individuals
- We cannot vouch for the quality of goods and/or services offered in this section. All ads are accepted in good faith
- We reserve the right to amend or refuse reader ads at our discretion
- No pirated software may be sold through these columns. Any reader being offered non-originals should contact us
- We cannot guarantee that reader ads will appear in particular issues of Express
- The following declaration must be signed:

*My advertisement conforms to the terms above and is legal, decent, honest and truthful.*

Signed .....

NAME .....

ADDRESS .....

TEL .....

Please tick the category you want your ad to go in: ☐ Help Offered  
☐ Mini-tips ☐ For Sale ☐ Goods Wanted ☐ Services ☐ Events ☐ Bugs  
Discovered ☐ Virus warning ☐ Humour ☐ Announcements ☐ User Groups  
☐ Bulletin Boards ☐ Personal ☐ Misc.

### WRITE YOUR FREE AD HERE




# YOUR ONE STOP SHOP

MORE SOFTWARE THAN YOU CAN HANDLE!  
MORE HARDWARE THAN YOU CAN USE!

# Software

## SUPERSTORE

### AMIGA 512K MEMORY EXPANSION

- \* Brings your Amiga up to 1 Meg in seconds.
- \* Enable/disable switch. Now you can run ALL software.
- \* Easy to fit - no technical knowledge needed.
- \* Reliable, fast, high quality chips on a robust through plated P.C.B. Do not confuse with cheaper, inferior products.
- \* DOES NOT INVALIDATE GUARANTEE.

**ONLY £69.99**

**ONLY £79.99 FOR VERSION WITH CLOCK/CALENDAR**



## AMIGA A500 BATMAN PACK ALMOST HALF PRICE

	R.R.P.
A500.....	£399.99
TV MODULATOR.....	24.99
BATMAN (THE MOVIE).....	24.99
NEWZEALAND STORY.....	24.99
DELUXE PAINT II.....	49.99
INTERCEPTOR.....	29.99
TEN STAR PACK.....	229.50
TOTAL R.R.P. ....	£784.44
LESS DISCOUNT.....	£384.45

**OUR PRICE.....£399.99**

\*OR £15 MONTHLY

### 1 MEG AMIGA :-

as above plus half meg upgrade, mouse, mat, mouse holder, lockable disk storage case, dust cover and 10 disks

**OUR PRICE**

**ONLY £499.99**

\*OR £19 MONTHLY

### ST 2nd DRIVES

ALSO AVAILABLE  
PLEASE ASK FOR DETAILS

WE STOCK MOST  
**DATTEL**  
PRODUCTS

### SEGA

WE STOCK A  
VAST RANGE  
OF ALL THE  
VERY LATEST  
TITLES



\*(subject to status) Written details on request.

### MAIL

**ORDER:-**  
Carriage  
at Cost

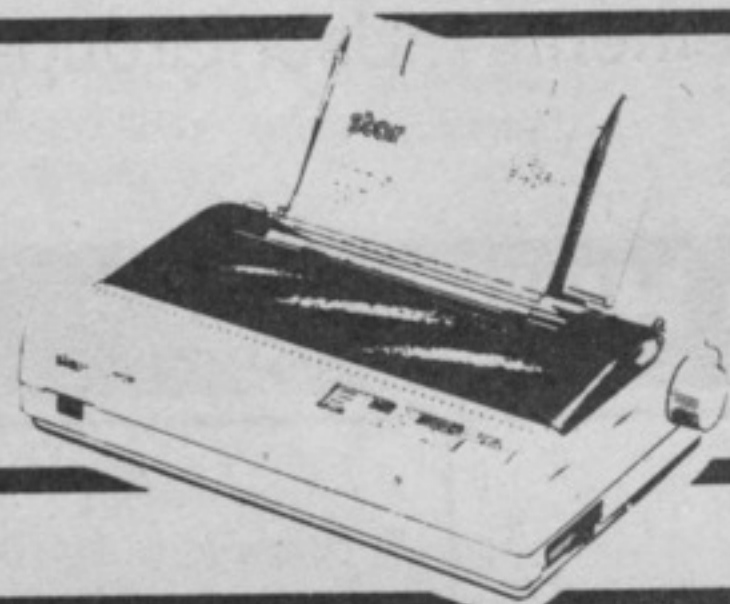
**ORDER HOTLINE**  
(MON to FRI)

**(0782) 202269**

**ADVICE HOTLINE (0782) 268620**  
for FAST & FRIENDLY SERVICE

### OCEANIC DISK DRIVE

**C64 COMPATIBLE DISK DRIVE**  
SMART - SLIM - RELIABLE  
**FREE ACTIVISION MUSIC STUDIO**  
with every drive  
**ONLY £129.00**



1 YEAR ON-SITE  
MAINTENANCE  
ONLY £10 EXTRA  
ON ANY PRINTER

### PRINTERS

#### STAR LC10

Acclaimed "Best Buy" budget printer.  
Now massively under-priced at just

**£169.99** \*OR £8 MONTHLY

#### STAR LC10 Colour

The perfect printer for every Amiga.  
Colour output from all the better art packages - or just slot in a black ribbon for word processing. Cheap to run too. Very affordable

**£229.99** \*OR £9 MONTHLY

#### STAR LC24 - 10

24 Pin quality at a price you can afford.  
8 Fonts, 3 print variations, paper parking, 170 CPS draft, 57 CPS LQ

**£259.99** \*OR £10 MONTHLY

**FREE Cable with every Printer**

#### STOKE-ON-TRENT

11 Market Square Arcade,  
Hanley Stoke-on-Trent  
Manager: Wayne Tel: 0782  
268620 Open 6 Days

#### SHEFFIELD

6 Waingate, Sheffield  
Manager: Tony  
Tel: 0742 721906  
Open 6 days

#### ST HELENS

27 Baldwin Street,  
St Helens  
Manager: Adrian  
Tel: 0744 27941  
Closed Thursday

#### STOCKPORT

6 Mealhouse Brow,  
(Off Little Underbank),  
Stockport. Manager: Ray  
Tel: 061 480 2693  
Closed Thursday



**"A**corn is committed to the future of multimedia in schools," claims Chris Humphries, Acorn's education sector manager. "The powerful combination of RISC technology and CD-ROM will provide exciting and innovative educational uses of the new medium."

Given the public profile of the Archimedes and the BBC A3000 – overpriced machines dominating the educational market – the introduction of a CD-ROM drive for £750 won't appear expensive. For although companies like Hitachi offer such drives for less than £500, Acorn has worked closely with the Cambridge-based Next Technology Corporation – of the CD-ROM drive – to ensure its new baby is as future-proof as possible.

Capable of storing 550Mb of information – equivalent to 250,000 pages of text, 5,000 photographs, 72 minutes of high quality audio, or a combination of all three – the drive also offers 0.4-second average access times, claimed to be twice as fast as the competition. Besides being compatible with CD discs from other machines using the High Sierra and ISO9660 formats, it also supports the fledgling CD formats of CD-ROM XA, DVI and CDI, making it an upwardly compatible system. In addition, Next Technology has developed a CD-ROM pressing facility so that user-originated software can be permanently transferred for less than £300.

This makes the price seem more reasonable, but the clinching factor is – wait for it – the system's networking capabilities. For the CD filing system used is compatible with Acorn's Econet local area network, and thus enables a single Archimedes CD-ROM to be networked to other Acorn computers to provide access to a central CD-ROM resource bank – a facility not previously available. The SCSI interface used allows up to 20 CD players to be daisy-chained with a single card, providing a central information resource with many different disks available simultaneously. In an ideal Acorn world – perhaps some cathedral-town public school with a six-figure equipment budget – a whole classroom could study history, geography or whatever discipline you care to mention without there being a single book in sight!

Realistically though, the unit will perhaps be something of a lonely soul for the foreseeable future until a mass of educational titles make the journey over to the new format. NERIS, the National Education Resource and Information Service, and Virgin are said to be developing new CD-ROM applications. In the meantime the medium will largely be used for read-only applications as a super-duper hard disk. As such, graphics from the CD-ROM can be imported into software packages such as *Draw* and *Desktop Publisher*,



# CD: THE FUTURE OF EDUCATION?

The recent British Educational Technology Show served as the launch pad for Acorn's CD-ROM drive which it promises will revolutionise computing in schools. Andy Storer took it for its first spin.

while animation sequences can be generated to accompany audio CDs. Audio can also be processed via sampling and sequencing software to explore sound and musical compositions.

## CD REVOLUTION

CD sales now total several billion, with more than 50 million players around the world. Information is stored in the form of pits on the disc, representing the binary 0s and 1s of digital data, which are read by laser. With 550Mb of data at their disposal the operative word for educationists will be 'resource'. Expect to see everything from the *Mozart Resource Suite* to *A History of Tropical Rainfall 1924- 1990 Resource Pack III* on a classroom shelf near you soon.

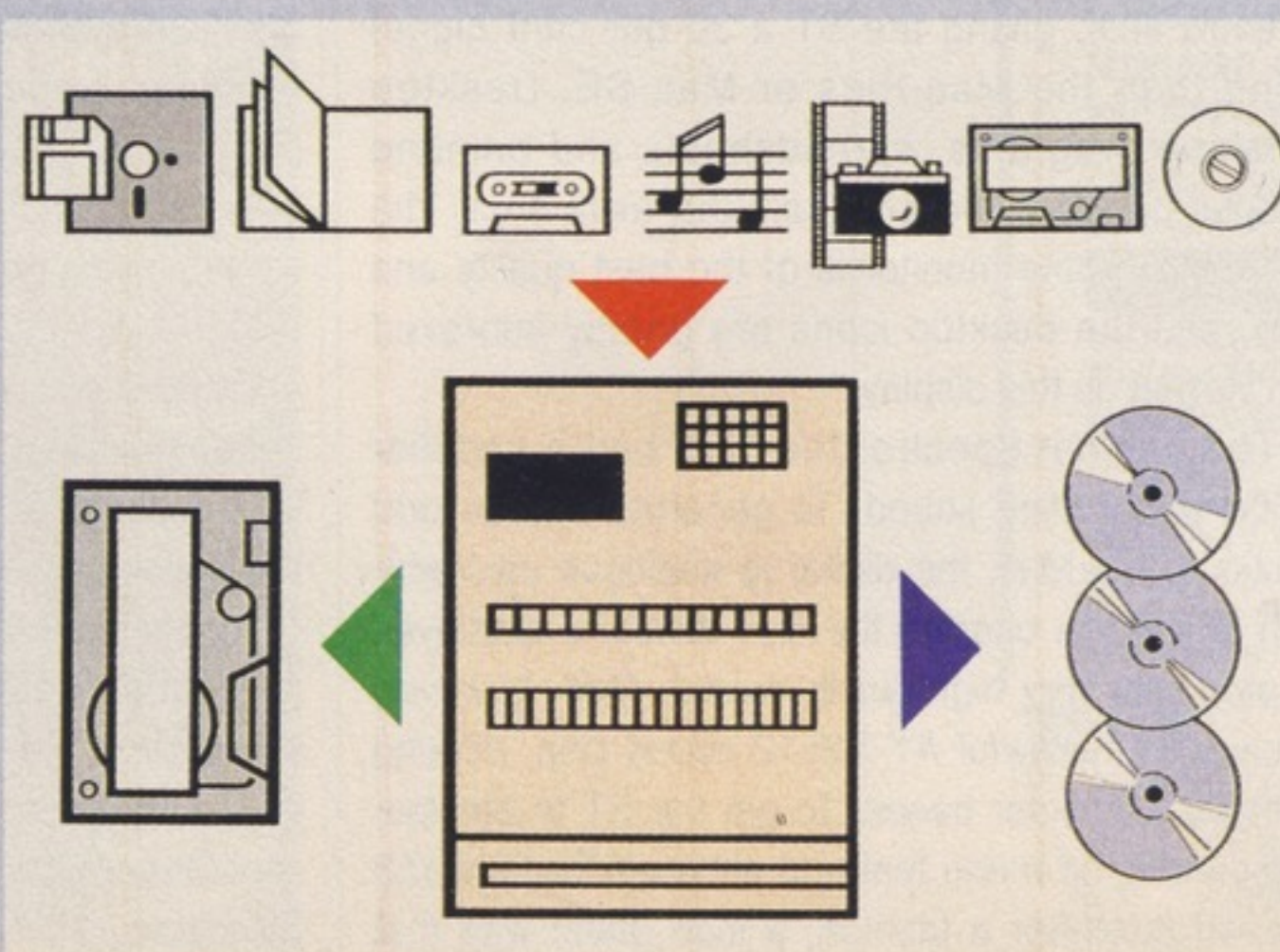
Seriously though, the implications for the way in which subjects are taught is enormous, since the medium opens up the whole area of interactive tuition. Here a student may define his or her own interests and explore them at will in his or her own time. Given Acorn's strength in the education market and some long overdue cash injection from the Government, CD-ROM might just transform those boring old history lessons into exciting adventures. ■

● The Acorn CD-ROM drive costs £600, with its SCSI interface an additional £150. The drive comes with utility software, clip art images and audio tracks. Acorn dealers will be selling the drive from March, with schools able to buy an A3000 multimedia system for under £2,000.

## PRESS YOUR OWN CD

Next Technology is offering its 'Pressed For Time' CD-ROM production facility to cater for most types of compact disc, ranging from standard audio discs to discs containing data, text, graphics, sound, speech and video. Although large-scale replication is available, the service offers one-off pressing for as little as £300. Ideal for that truly personalised birthday greeting!

Data can be imported in the form of floppy disk, DAT cassette, 35mm slides, photographs, VHS videotape, Video 8 or microfiche. MS-DOS and Apple Mac file formats.





## ● SPECTRE GCR

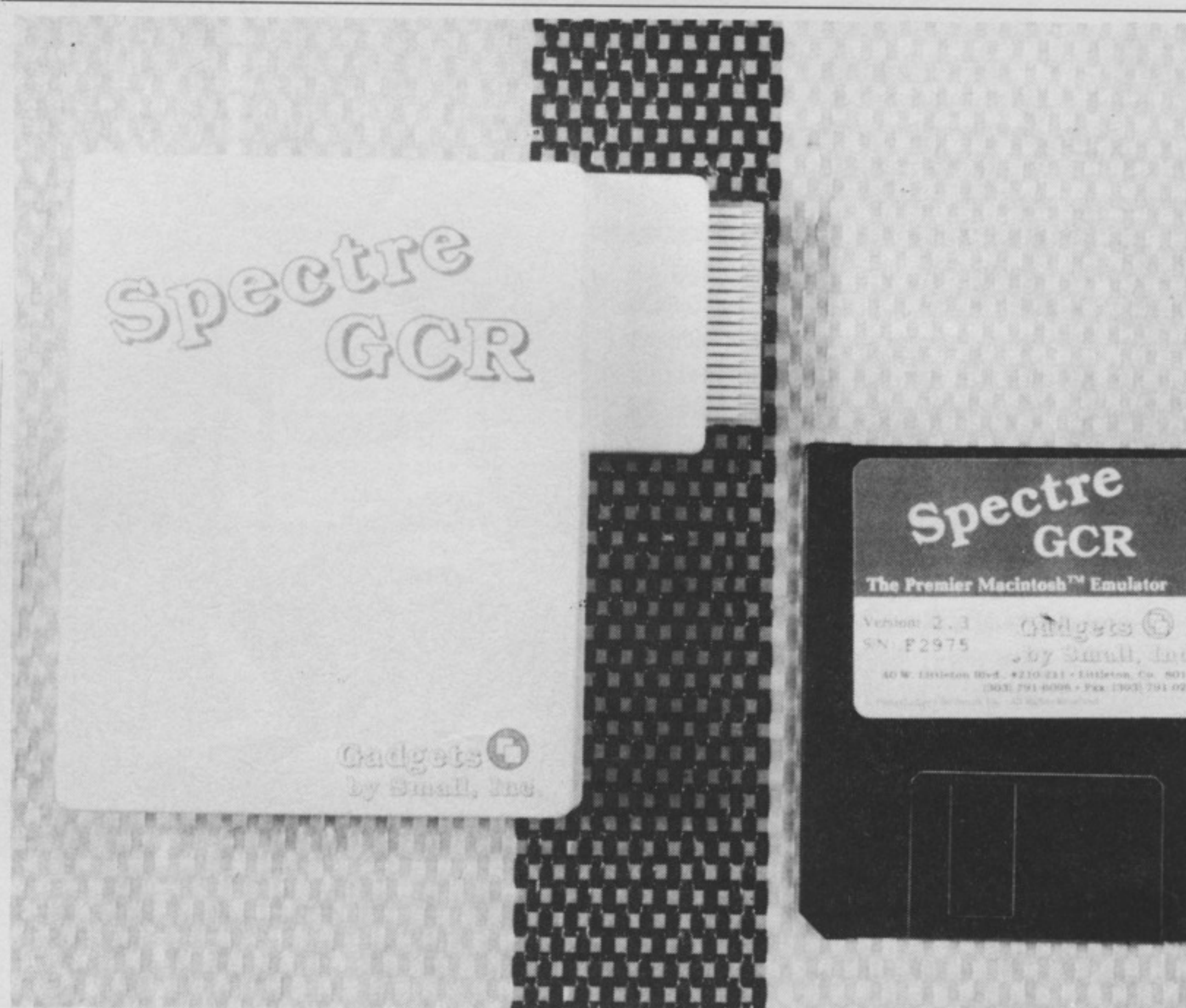
ST with 1Mb • £379 •

HISOFT • 0525 718181

Why are so many manufacturers creating hardware-based emulators for the Atari ST? Dozens of devices provide the ST with every kind of mask from PC to Atari 8-bit, and high in that list of look-alike machines is the financially-remote Apple Macintosh. The Mac is a machine which resembles the ST, but has a much more sophisticated user interface and software a universe apart in terms of quality.

Magic Sac was the first Mac emulator which, unfortunately, refused to work properly. Next came Aladdin, a truly excellent emulator which was restricted to the now-dated 64K Apple Mac ROMs. With the advent last year of Spectre 128 from an American company, Gadgets by Small, the way was clear for full emulation using the more up-to-date 128K ROMs. Although good, Spectre's great stumbling block was its inability to read Macintosh disks directly.

The boffins at Macintosh decided it was a good idea to use an unusual method of disk control, involving variable disk rotation speed and a recording method known as group code recording (GCR), as



# SPECTRE HAUNTS THE MAC

opposed to the ST, Amiga, PC *et al*'s MFM or modified frequency modulated. The former is a very different animal from the latter, and is extremely difficult to emulate without starting from scratch.

The latest product from Gadgets by Small is the Spectre GCR and, you guessed it, the device performs Mac emulation, uses 128K ROMs *and* (and it's a big 'and') enables users to put genuine Mac disks directly into their ST drives and read them with ease. No more complicated procedures involving transferring data and programs via serial cables. That's the biggest selling point, but just how good is Mac emulation on the ST?

## PLUG IN

Spectre GCR is housed in a plastic box which affixes to the ST's cartridge port and sits alongside the machine. Two sockets at the rear of the device connect to the disk drives. Power for the Spectre is drawn from the cartridge port, so there's no extra three-pin plug vying for power at your mains outlet.

To emulate a Mac, insert the Spectre into the cartridge port, plug in the drives and boot up the accompanying utility disk. Double click on `SPECTRE.PRG`, press [Return] once and you're prompted for a System/Finder disk. Satisfy this request and you're regaled with the renowned smiling Mac, a 'Welcome to Macintosh' message, and, hey presto, your ST is a Mac Plus. No messing around with serial cables, funny disk formats and the like, but simple, easy-as-a-Mac to boot-up emulation. It really is amazing. Your ST is a Mac Plus. Pick up a disk, any disk, and put it in the drive. Moments later, just like the Mac, the disk's icon appears on the desktop. You can run programs, format disks, delete files or perform any

At last true Macintosh emulation is possible on the ST, with a cartridge that can read and write Mac disks directly. Jerry Glenwright sampled the power of the GCR...

operation. The only limitation is your ability to afford expensive Mac software.

## SOUND AND VISION

The ST offers a high-res screen resolution of 600 x 400 pixels, giving it a larger screen than the tiny Mac offering. Because most Mac software determines the kind of screen it is running on and changes automatically, almost all programs take advantage of this extra size, giving the ST a 30 per cent bigger screen than the Mac Plus or Mac SE. Desktop publishing programs, spreadsheets and painting packages benefit immensely from this extra area. The Atari monochrome monitor is of the best quality and clarity, and the desktop icons are greatly improved when viewed on this display.

The original Spectre, the 128, had a peculiar method of handling sound. To generate buzzes and squeaks in the Mac, the digital to analogue converter which is used to operate the disk drives is employed and produces very high-quality sound. Atari, however, plumped for the awful AY-3-8512 sound chip, offering archetypal computer beeps. To get the ST to emulate Mac sound is no mean feat and although Spectre 128 achieved this after a fashion, a side effect was that often sound did not switch off when required. To put an

end to its continuous droning, users were required to switch it off manually, using the Esc key – an unsatisfactory solution!

There's none of that with the GCR. Sound is as clear as a bell, and all sounds end when they're supposed to, rather than when you've decided you can take no more. There's a considerable amount of public domain software available for the Mac, and one of the more popular programs is the aptly named *SoundMaster*. This enables Mac users to patch digitised sounds into the operating system. So, for example, if you eject a disk from the drive you are played the sound of a person throwing-up. Horrid, but amusing. Switch the machine off, and just before the screen clears the Mac will tell you (in HAL's voice from *2001: A Space Odyssey*) 'My mind is going...', and attempt to delete a System file and the angry Mac will shout (just like John Cleese) 'You silly sod!'. All of these sounds work perfectly and to hilarious effect with the Spectre GCR.

Why do I tell you all this? Partly because these anecdotes demonstrate the remarkable quality of sound provided by Spectre, and partly to tell you just how compatible the Spectre is. Sure, the emulator will run *Quark Xpress*, *MacWrite*, *MacPaint*, *Digital Darkroom*, *CricketGraph* – even *HyperCard*, but that's what you would expect. All those programs are written



to exacting standards and follow strict programming guidelines. PD programmers however, are not known for their kid-glove treatment of the Mac. Delve in and get your hands dirty is their philosophy. And if PD programs such as *SoundMaster* and the various RAM disks, print spoolers and comms programs are compatible, then you can be sure that the Spectre is very good.

## SPEED TRIALS

Many emulators, not only those attempting Macintosh emulation, work at a snail's pace. They emulate, but at a cost to speed. But due to the two machines' vaguely similar architecture, and the rather faster processor in the ST, speed of application execution is actually increased by 20 per cent on the Atari. Incredible as it may seem, you can run software intended for the Mac 20 per cent faster and with a 30 per cent larger screen than when running on the original machine. DTP, painting and other programs positively run, not walk, and those used to using Macs in the workplace will really appreciate the extra rate.

Disk drives can pull in data at almost twice the standard ST rate, despite the difficulties performing group code recording and variable drive speed – really quite amazing.

## VERDICT

It's precisely because the ST is such a powerful tool

# MACINTOSH

that it is used as the basis for so many emulators. Indeed, since the launch of the machine, a multiplicity of journalists have ensured that Mac-ST comparisons have become a cliché of the more down-market hobbyist magazine. But now, with the Spectre GCR, the cliché becomes reality.

Plug in the GCR and your ST is a Mac Plus for slightly more than half the price of the genuine Apple machine. And the emulator will give you access to some of the best DTP, painting, drafting, spreadsheet and word processing programs ever written, and a huge PD base.

By way of summarising then, the Spectre GCR is a very high-quality product that deserves absolutely every penny of its less-than-exorbitant asking price. So it is without hesitation that I say – If you can afford it, buy it. ■

## EMULATING: THE PRICE

A quick look at the balance sheet shows why Mac emulation is so popular:

Mac Plus	£995.00
Mac HD20	£650.00
VAT	£256.75
<b>TOTAL</b>	<b>£1,891.75</b>

1040STFM	£499.00
Spectre GCR	£379.00
20Mb hard disk	£389.00
SM124 monitor	£130.00
<b>TOTAL</b>	<b>£1,397.00</b>

## TECH SPEC

Offers 30 per cent larger screen than the Mac Plus and Mac SE

Offers 20 per cent increase in speed

Supports A, B and C versions of the latest 128K ROMs

Shipped complete with ROMs

Fully-compatible with Mac format disks. Simply plug them in and go

Has a built-in drive cache for extra speed

Supports both monochrome and colour monitors

Full sound compatibility

Supports Atari mouse

Supports all hard drives

Supports serial and parallel ports

Supports Atari laser and standard dot-matrix printers

## TESTING, TESTING

The following programs were tested and found to be fully compatible:

Quark Xpress

Aldus PageMaker

Ready, Set, Go!

Digital Darkroom

HyperCard

CricketGraph

MacWrite

MacPaint

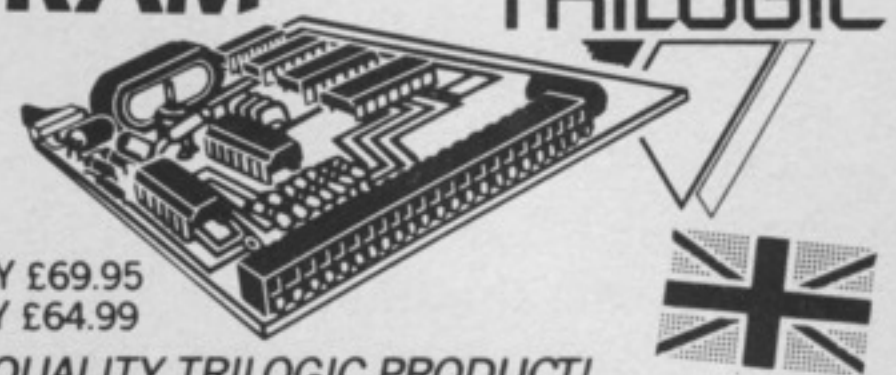
MacDraw

Various versions of System and Finder

# AMIGA SUPERMARKET

## A500 512K RAM UPGRADE

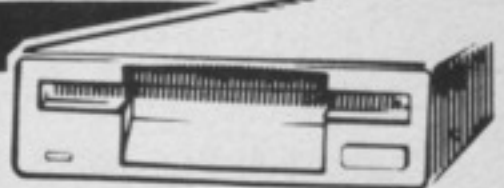
- LATEST LOW POWER CHIPS
- ON/OFF SWITCH
- EASY TO FIT
- WITH CLOCK & BATTERY ONLY £69.95
- LESS CLOCK & BATTERY ONLY £64.99



ANOTHER LOW COST HIGH QUALITY TRILOGIC PRODUCT!

## EXTERNAL 3.5" DISK DRIVES

- 880K FORMATTED CAPACITY
- VERY QUIET OPERATION
- LOW POWER CONSUMPTION
- THROUGH POST
- SLIMLINE STEEL CASE
- NEC MECHANISM



3.5" DRIVE WITH ON/OFF SWITCH NOW ONLY £74.99 POST FREE

## HARDWARE

A500 BATMAN PACK	£379.99
A590 HARD DRIVE	£379.99
RAM CHIPS FOR A590 TO GIVE UPTO 2 MEGS	£45.00/512K
PHILIPS CM8833 STEREO COLOUR MONITOR	£244.99 FREE CABLE
PHILIPS 12" MONO MONITOR FOR AMIGA	£84.99 FREE CABLE
STAR LC 10 PRINTER	£169.99 FREE CABLE
STAR LC10 COLOUR PRINTER	£214.99 FREE CABLE
STAR LC24 — 10 24 PIN PRINTER	£249.99 FREE CABLE
CITIZEN 120D PRINTER	£139.99 FREE CABLE
DIGIVIEW GOLD V4.0	£139.95
PAGE LINNET MODEM & CABLE FOR A500	£174.95
MINIGEN GENLOCK FOR A500	£109.99
MARCONI TRACKERBALL FOR AMIGA	£54.95
REPLACEMENT MOUSE + MOUSE HOLDER & MAT	£29.99

All prices include carriage. Fast courier delivery £5.00 extra (UK mainland only). Free on orders over £500

## AMIGA AUDIO DIGITISER

— NEW, CHOOSE MONO OR STEREO VERSION

Both Amiga audio digitisers give superb performance, unsurpassed at the price. No software is supplied, since they are fully compatible with Perfect Sound, Prosound Designer, Audiomaster, and Dattel's Prosampler. Sampling rates up to 60KHz are possible depending upon the software. An audio lead is supplied for connecting to the headphone socket or line output of a radio, personal stereo, keyboard etc. Full instructions are included, and the mono version also has an L.E.D. overload indicator. A public domain "Sound Workshop" disk is available which has demo versions of Audiomaster & Perfect Sound etc.

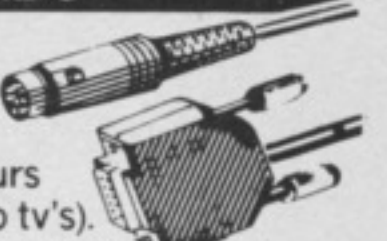


MONO DIGITISER	£27.99 POST FREE	STEREO DIGITISER	£37.99
SOUND WORKSHOP DISK			FREE WITH DIGITISER
AUDIOMASTER II, WHEN PURCHASED WITH DIGITISER	ONLY	£54.99	SAVE £20.00

## AMIGA MONITOR & PRINTER LEADS

### RGB TV & MONITOR LEADS

We have leads to connect all AMIGAS to your TV or colour monitor provided it has an RGB input socket. All leads give a much clearer picture than using the AMIGA MODULATOR, permit ALL 4096 colours to be displayed and include the audio lead (to give stereo with stereo tv's).



ORDER AL 1 FOR TV's WITH 21 PIN EURO (SCART) SOCKET. FITS PHILIPS, FIDELITY, SONY, GRUNDIG, NORMENDE, ETC.	ONLY £10.99
ORDER AL 2 FOR FERGUSON TV's WITH 7 or 8 PIN DIN SOCKET. MODELS MC01 & MC05, ETC.	ONLY £10.99
ORDER AL 4 FOR HITACHI & GRANADA TV's WITH 7 PIN DIN SOCKET. MODELS CPT1444, ETC.	ONLY £10.99
AMIGA TO MULTISYNC MONITOR (analogue RGB) AL11	£9.99

MANY OTHER AMIGA MONITOR/TV LEADS LISTED IN OUR FREE CATALOGUE.

OUR LEADS ARE GUARANTEED TO WORK WHERE OTHERS DON'T! LEADS ALSO AVAILABLE FOR ATARI ST RANGE. PLEASE CONSULT US IF IN DOUBT.

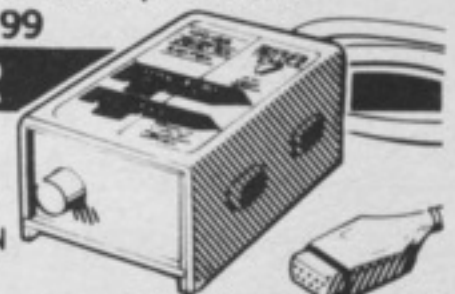
## NEW — MONITOR SHARER

SHARE 2 COMPUTERS WITH ONE TV/MONITOR

Plug-in the scart leads from any two computers eg AMIGA & ST or one computer & one VCR, and connect the SHARER to the tv or monitor's scart socket. Just press the switch to instantly select either computer. MSW £15.99

## MOUSE/JOYSTICK SWITCHER

- NO MORE UNPLUGGING MOUSE WHEN JOYSTICK REQUIRED
- EXTENDS THE PORT FOR EASIER ACCESS
- SAVES WEAR & TEAR ON THE MOUSE PORT
- PUSHBUTTON SWITCH CAN BE OPERATED WHEN THE COMPUTER IS ON



NEW COMPACT DESIGN £12.99 order as DJA1

## AMIGA MINI STEREO AMPLIFIERS

MINIAMP 2 combines a mini stereo power amp with two neat speaker units which connect directly to your AMIGA. They are ideal for use with mono TV's & monitors, & simply plug in for instant stereo sound. You'll be amazed at the difference. MINIAMP 2 WITH REMOTE VOLUME CONTROL & ALL LEADS ONLY £19.99



MINIAMP 4 comprises separate 4 watts per channel high quality mini stereo amplifier with loudspeaker/headphone socket, separate speaker unit with 4" twin cone drivers, mains power pack & connecting lead for AMIGA.

CAN BE USED AS 'WALKMAN' BOOSTER & WITH OTHER COMPUTERS

MINIAMP 4 STEREO AMPLIFIER SPEAKER SYSTEM MA4 £34.99

## NEW — AMIGA MIDI INTERFACES

MIDI INTERFACE 1 FOR A500/2000 OR A1000 MIF1 £29.99

This has MIDI IN, OUT & THRU sockets.

MIDI INTERFACE 2 FOR A500/2000 OR A1000 MIF2 £34.99

This has MIDI IN, MIDI OUT, MIDI THRU plus 2 UNIQUE switchable MIDI OUT/THRU SOCKETS to save you having to swap MIDI leads when using more than one MIDI instrument. FREE MIDI LEAD WITH BOTH INTERFACES

We also stock Amigas, PCs, Printers, Monitors, Hard Disks, Memory Expansions, Video Digitisers, Selected Software & Books — Phone for our free 20 page catalogue. Trade enquiries welcome. Please add 75p part postage + packing to orders under £15.00

FREE CATALOGUE WITH ALL ORDERS EXPRESS DELIVERY £1.99 EXTRA



TRILOGIC Dept. N.C.E., Unit 1, 253 New Works Road, Bradford BD12 0QP  
Tel 0274-691115 Fax 0274-600150

• FAST MAIL ORDER SERVICE • PROMPT DESPATCH • ALL PRICES FULLY INCLUSIVE PLUS 10 DAY MONEY BACK GUARANTEE ON ALL ITEMS. PAYMENT BY CASH, CHEQUES PAYABLE TO TRILOGIC BY POSTAL ORDER, ACCESS OR VISA. ADD £2.99 EXTRA FOR EXPORT ORDERS, PAYMENT IN STERLING ONLY PLEASE.



**D**isks are the PC's filing cabinets. When data is not actively being processed by the CPU it is stored on disk, just like putting a paper folder in a filing drawer when you have finished looking at it for the moment.

Most PC disks are 'magnetic media'. This means that they store the computer's data on a magnetic surface not unlike that found on a cassette tape. Disks are much quicker in day-to-day use than tapes, however. Just as it is easier and quicker to find a particular track on an LP record than on an audio cassette – because it is possible to jump tracks almost instantaneously – a given piece of data can be retrieved more quickly from a disk than a computer tape.

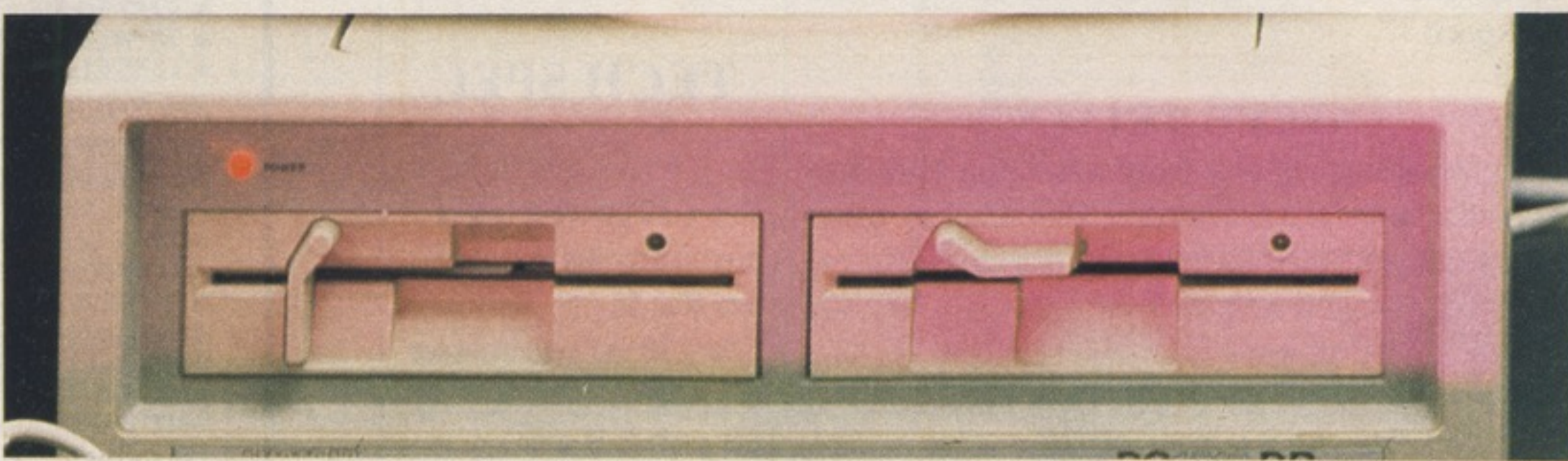
The two main types of PC disks are floppy disks and hard disks. Floppy disks are so called because the magnetic layer is placed on a flexible sheet of plastic which is, yes, floppy. This sheet of plastic is sealed in a relatively robust cardboard or plastic case to protect it. Floppy disks (also called diskettes) can be removed from their drives, in the same way that LPs can be taken off a record deck.

Hard disks have a hard platter. This is built into the drive as a permanent feature, allowing the whole device to be built to a stricter standard than is possible with a floppy disk. For this reason, a hard disk of a given diameter is usually able to hold at least 10 times as much data as a similarly-sized floppy disk. The hard disk is probably the single most desirable extra if you have a basic PC, more useful than a pretty graphics display or a faster CPU. Many programs now require the user to have a hard disk since they cannot fit on to a single floppy, so if you want to run one of these applications a hard disk is an essential. Also, if you are dealing with large amounts of data, floppies are incredibly unwieldy. The article you are reading, typed with a simple word processing package, uses up some 15,000 characters of disk storage – a blockbuster novel could well eat up half a dozen floppies! A hard disk can swallow such documents with ease. Graphics programs also make a hard disk necessary, since many single pictures are bigger than a floppy disk.

Tape is used on some PCs, but only for long-term storage, or keeping duplicate copies of data. As tape is so much slower than disk, it is not suitable for day-to-day use, but it does provide a handy (and relatively cheap) way of storing old data for security purposes.

The latest medium of data storage to gain a foothold in the PC world is the optical disk. Various types exist, of which the most common are the WORM (Write Once, Read Many) drive and CD-ROM (Compact Disc Read-Only Memory). At the moment, optical storage is still very expensive and the standards have not yet been fully agreed. It does seem likely to be the medium of the future, however.

In the third part of our eight-part series on PC-compatible computers, Mike Hardaker looks at data storage, exploring the world of floppies and hard cards, and examining the options for the future.



## 1 FLOPPY DISKS

The first PCs in 1981 came with a port for attaching a home cassette recorder and a single floppy disk drive. This took 5.25-inch floppy disks and wrote on only one side of the disk to provide 160K (163,840 characters) of storage. These disk drives did not last long and if you are offered one today you should refuse it. Although other PC users will be able to read files you have written on a 160K disk, you won't be able to read any files which were written to any other format. Since no software is available on 160K disks, the format's limitations are obvious.

The standard disk for the PC and XT is the 5.25-inch double-sided, double-density floppy disk, formatted to provide 360K of data storage. Most software is issued on this format and most PCs can read disks you have written with a 360K drive. For all but a few specialised applications it is still the most useful sort of disk drive you can have.

The PC-AT generally uses special drives which can use high-density, double-sided drives to give 1.2Mb (1,258,291 characters) of storage. Software which can only run on AT-class machines (not the humbler XTs) is often shipped on 1.2Mb disks. These drives can read the lower density 5.25-inch disks, but occasionally have problems writing to them. If you have an AT, but regularly need to transfer data to an XT, it is worth having a 360K drive as well as the 1.2Mb version to make sure your data is not corrupted.

In the past three years, the 3.5-inch disk (as used on the Atari ST, Commodore Amiga and Apple Macintosh) has gradually become a strong second standard in the PC arena. There are two sorts of 3.5-inch disk – the 720K and the 1.44 Mb. 720K disks are the standard on those XTs which use the 3.5-inch form factor (PC-ese for 'size') and 1.44Mb for ATs. 1.44Mb drives can both read and write 720K disks but the opposite is not the case. 3.5-inch drives are the standard for portable PCs because of their smaller size, but are increasingly being seen on desktop machines since IBM embraced them in 1987, and gave up on the 5.25-inch disks.

Every PC must have at least one floppy disk, otherwise you can't get anything in and out of the thing. How many disks you have is a matter of personal

preference, but in today's environment a single-floppy PC is not really practical. Any serious PC has at least two disk drives, although only one of these has to be a floppy. For any sensible use at all, two floppies represents the minimum configuration, with a floppy and a hard disk being preferable.

On the whole, 3.5-inch disks are the better bet. They are more resilient than 5.25-inch disks because of their rigid plastic case, and they hold more data. However, some software (particularly the budget sort) is still only available on 5.25-inch. Check this before buying. The ideal PC would have a 1.2Mb drive, a 360K drive and a 1.44Mb 3.5-inch drive, together with a meaty hard disk.

## 2 HARD DISKS

The first hard disks held 10Mb of data. Now, such items are rare, as Parkinson's Law has ensured that modern software expands to fill the disk available.

The smallest hard disks now seen are 20Mb in size. This is enough for most everyday uses, if you stick to conventional, text-based processing. The next size up is generally 32Mb, which is better. The 32Mb disks score over the 20Mb variety because they use a different, more efficient way of encoding the binary data on the disk platter. This is known as RLL (Run Length Limited) rather than MFM (Modified Frequency Modulation). The acronyms are pretty meaningless but it's worth remembering the letters.

Bigger disks – and 300Mb is by no means unusual now – use yet more standards. These are ESDI (Enhanced Small Device Interface) and SCSI (pronounced 'scuzzy' – Small Computer System Interface). There is little to choose between these two, but SCSI is becoming a stronger standard so is probably a safer bet.

The key thing to look for when buying a hard disk is its speed. Although it is not generally realised, the disk is the most common constraint on a PC's performance – far more than the CPU. A PC with a slow CPU and a fast disk will frequently out-perform one with a quick CPU but a poor disk.

The two ways in which a disk's speed is measured are its access time and its data transfer rate. The

## WHEN IS A DISK NOT A DISK?

When it's a credit-card disk, of course. The latest generation of super-small, Filofax-sized PCs don't use conventional disk drives, which are too large. Instead, they use special cards for holding the data. These look like credit cards, but hold

up to 1Mb of data. The technology is certainly attractive, but it is pricey (up to £100 per card) and lacking in an accepted standard. The great thing about the floppy disk is that every other PC user has one.

Also new on the scene are 2-

inch floppies. Zenith is using these in its new MinisPort, an A4-sized laptop. Although rather charming to look at, these too have yet to establish themselves in any way, so a bit of waiting and seeing probably would not come amiss.



access time tells you how long it takes the read/write head (the equivalent of a record deck's stylus) to reach the data you require. On a 20Mb disk, 65 milliseconds is average, with a higher number being poor. On larger disks, 28ms is establishing itself as a good target speed. The largest disks are very fast – with 18ms not unusual – but they are also very expensive. Data transfer rate – how quickly the data moves from the disk to the CPU – is rarely quoted in advertisements, so you will probably have to go by the access time. However, if you are given a choice of transfer rates remember that the higher, the better.

A 40Mb disk with a 28ms access time will be suitable for the majority of users. This sort of disk provides today's optimum compromise between performance and cost.

## HARD CARDS

Hard disks require some further hardware called the hard disk controller. This acts as an interface between the PC and the disk.

Some disks, however, come on the same circuit board as the controller. These are called hard cards and they fit in the PC's expansion slots. They are particularly useful for people who have no space in their computers for a conventional hard disk (which sits in the main chassis like a floppy disk). People who have twin-floppy Amstrads are particularly keen hard card purchasers – the Amstrad PC1512 and PC1640 can hold only two storage devices on the main chassis.

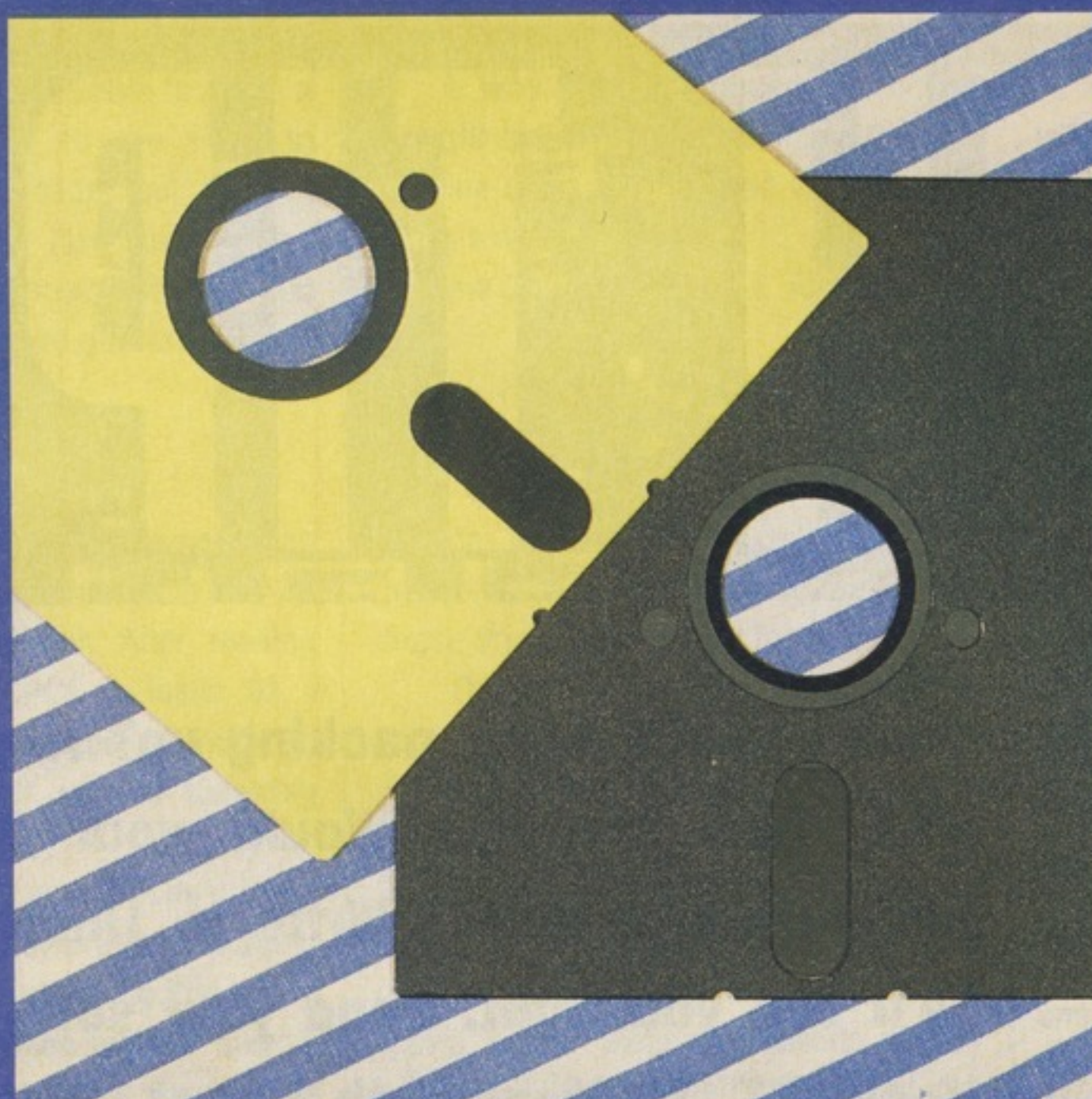
There is no reason why a hard card should be any better or worse than a conventional hard disk. However, some users feel they break down slightly more frequently. If you buy a hard card, the best advice seems to be that you should check you have a rock-solid 12-month guarantee.

## OPTICAL STORAGE

CD-ROM (Compact Disc Read-Only Memory) is the booming product in this area. As their name suggests, CD-ROM disks cannot be written to by the user, only read. Therefore, they are primarily a distribution medium for software and large chunks of data. Since a CD-ROM disk holds 400Mb of data, it is ideal for distributing things such as *Encyclopaedia Britannica* and *The Oxford English Dictionary*. Also, CD-ROM is expected to grow in importance as disk-hungry multimedia software involving real-time video expands.

WORM (Write Once, Read Many) drives are slightly different in that you can write data to disks. You can't change it once you've done so, however, so the applications are limited. WORM drives are used by companies who must leave an audit trail of every transaction they perform, since the unerasable nature of the WORM disks ensures data security and integrity. Also, WORM drives are tipped to replace tape as an archiving medium. The WORM disks share tape's advantage of costing little per megabyte, but unlike tapes, the data can be accessed quickly – just as with a conventional disk.

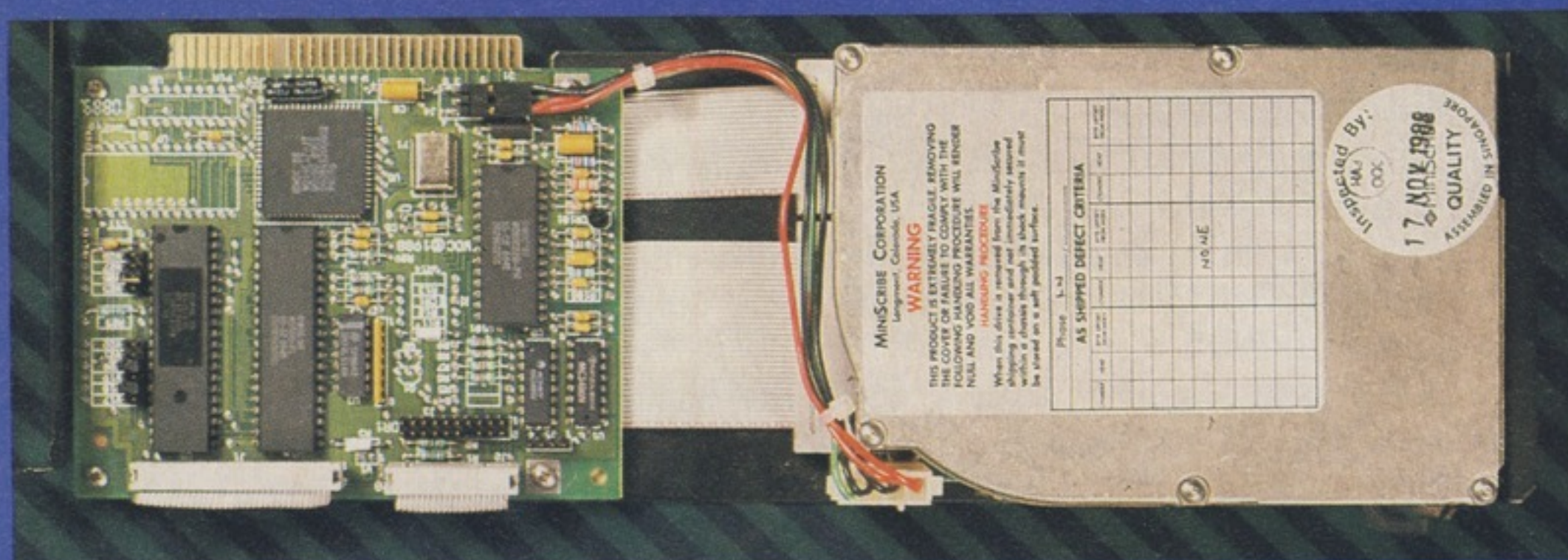
At the moment optical storage is a young technology. This means that it is still very expensive, but also that it has not yet settled down into a standard. The future is expected to bring CDs which can be written to and erased just like a magnetic disk. This may or may not happen, but it probably makes sense to wait for a while and see if it does. ■



**1** The first PC floppy disks were 5.25-inch disks holding 160K. The current standard is still the 5.25-inch disk, but these can now hold 360K (the 'double density' disks) or a massive 1.2 Mb (so-called 'high density disks'). From high-street retailers, floppies are comparatively expensive – buying a minimum of ten at a time from a mail-order outlet can save pounds.



Taking over from the 5.25-inch floppy disk is the increasingly popular 3.5-inch disk. It is smaller and more resilient than its predecessor. 3.5-inch disks come with either 720K or 1.44 Mb of capacity (the one labelled HD in our picture is one of the larger capacity disks). Astute Amiga, ST or Mac owners may notice that these look the same as their floppy disks. This is because they are the same.



**2** This is a hard card, but it shows all the elements of a hard disk in one neat package. The disk drive itself can be seen to the right. This is completely sealed in so you'll just have to take our word for it that there is a disk in there. The disk is linked via a strip of ribbon cable to the controller circuitry. On a conventional hard disk, the disk drive and the controller circuitry are mounted in separate parts of the computer – the hard card keeps them in one place.

# PC DISKS: THE HARD CHOICE



# TECH TIPS



## ■ TIP Psion of the times

In answer to Andrew Button wishing to connect his Psion Organiser to his Commodore Amiga. The following is a setup that I use:

1. In the Psion comms/setup menu set: baud=9600, parity=none, bits=8, stop=1, hand=all, protocol=XMODEM, echo=local, width=none, timeout=none, REOL=<LF>, REOF=<SUB>, RTRN=<HT>, TEOL=<LF>, TEOF=none, TTRN=<HT>#

2. Run Amiga PD program Comm (on Fish disk 71) and configure using the menu to select checksum mode.

3. Psion to Amiga: use Psion transmit option and Amiga XMODEM receive option.

4. Amiga to Psion: use Psion receive option and Amiga transmit option.

This method will only transfer text files i.e. OPL program source and data files. Files such as diaries are stored in a compressed and coded form, and they don't make a lot of sense if transferred.

When editing on the Amiga, make sure that spurious blank lines are removed from the end of the file otherwise when re-transmitted to the Psion, lots of dummy records (data files) or blank lines will be appended.

Steven Lomas, Bath, Avon

## ■ HELP! XExcellent!

I have a Panasonic KXP1081, and I also have a Spectrum computer and an Atari 130XE. I use the printer on the Spectrum via a Ramprint interface, but the Spectrum is old and my question is this: can I use the printer on the 130XE utilizing a similar cable like the one you recommended to A Oliver in *Express* issue 62? I know it was a different computer and printer than mine, but I remain hopeful.

William Jack, Airdrie, Lanarkshire.

The Panasonic KXP1081 is an incredibly popular dot matrix printer which, due to its standard parallel interface port, can be connected to a variety of home and small business microcomputers. Unfortunately, the Atari 130XE – as with many early home machines – has no parallel port but rather, uses a hybrid serial affair ensuring that you have to purchase printers offered by Atari.

To counter this and therefore fill a niche in the market, many third-party hardware suppliers market an interface

**Does your PC keep packing up? Is your Amiga less than friendly? Would your ST try the patience of a saint? Write to Uncle Tech Tip, he'll see you right. Send your sorry stories to Uncle TT, 30 Monmouth Street, Bath BA1 2AP. There's a prize for the most pitiful tale**

which plugs into the serial port and enables you to connect any parallel printer.

One of the best of these parallel interfaces is the Atari 850 interface. Costing £55, it will enable you to make full use of the KXP1081. Contact current distributor Computerhouse on 01-731 1276. The device has the added advantage of providing a proper RS232 serial port too. You'll be able to connect FAX, modems and the like.

## ■ HELP! ST trio

1. Will it do any harm to leave a colour television and an Atari SM125 monochrome monitor plugged into my 520STFM at the same time.

2. Does anyone make a lead to run an Amstrad mono monitor with a Spectrum +2a?

3. Using 1st Word Plus on an ST with two drives, how can I run the program on drive A: and keep the files on drive B:?

Allen Suddell, Grays, Essex.

1. Absolutely no harm whatsoever can come to your machine or either device by leaving them both plugged into the ST. You will, however, have to remove the monitor cable before a picture will appear on the television. But the TV lead does not need to be removed in order that the monitor can be used.

2. No – unless anyone out there knows differently. Hang on, isn't that a cliché of the rather poorer-quality TV program?

3. Simply run the program from a disk inserted in the A: drive, select Open File from the File menu and when presented with a standard GEM file selection window, click once in the portion containing the current drive and directory path.

You will then be presented with a blinking cursor. Press the escape key and type in B:\\*.\*, don't press return

but move the mouse pointer to the Close icon in the corner of the file list window and click once.

You will now be provided with a list of the files and directories on the B: drive. Select the file you wish to open or create a new file in the usual way. Saving the document will automatically take place on drive B:.

## ■ HELP! Big hard 'un

When will your magazine do a feature on hard drives for most of the popular micros? If not in the foreseeable future, I wonder if you can answer some of the following queries. I'm relatively new to these devices, and I am saving up for an Amiga hard drive.

1. What's the difference between a partitioned hard drive and one that isn't?

2. Do hard drives have start-up sequence scripts like ordinary disks when auto booting?

3. Do they all contain sockets for internal memory expansion like the Commodore A590?

Thus far I have been advised to look out for two drives: the 40-meg Vortex drive and the 40-meg Triangle offering. Which one if either, would you recommend if you were looking at reliability, speed and expandability?

Simon Lee, Crumpsall, Manchester

A thousand and one Technical editors up and down the country smirk smugly when asked a question like your opener. The answer, of course, is that as long-term, loyal readers will testify, we did do a definitive feature detailing hard drives and those available for all the popular micros (in fact all micros) way back in issue 22.

Just in case you've only recently discovered the best weekly read on the newsstands, a copy will be shipped

directly to your door upon receipt of 75p – need I tell you that the sum includes postage and packing – at our Somerton back-issues address (*Express* Back Issues, The Old Barn, Somerton, Somerset).

Meanwhile, because you're desperate for answers, and because it will take a few days to rush your handsomely-tooled back issue to you, here are answers to the questions in your letter.

1. Unlike floppies, hard drives can store a truly-enormous amount of data and programs. If you just bunged information onto the hard drive willy nilly, however, you'd soon end up with so many files you wouldn't be able to find anything.

In order to combat this undesirable situation, the hard drive can be split up into a series of small chunks which appear to the user to be drives in their own right. For example, you may have a 20Mb hard drive broken into one 10Mb partition named and referenced C: and two 5Mb partitions named D: and E:.

All of these drives are known as logical drives – as opposed to physical drives – and can be accessed individually and treated as though they were three completely separate devices. Of course, partitioning isn't permanent, and you can re-assign space at any time by re-partitioning the drive.

2. They do indeed, and you can design these so that particular programs are run upon booting, installing print spoolers, RAM disks and the like.

3. No, this feature depends upon the individual drive, the manufacturer, the model, but mainly – as with most things – upon the price. With hard drives, the old adage about paying for what you get certainly applies.

I would plump for the Vortex drive. Quality construction and excellent pricing make this device stand out above the inflexible disk crowds at the computer store.

## ■ HELP! Sinclair Amiga

I have recently acquired a Sinclair S-12mm mono monitor. Could you please advise me if it is possible to connect this model of monitor to my Amiga A500 and if so, how do I go about it?

Peter Hand, Sale, Cheshire.

The Sinclair S-12 is a monitor aimed firmly at the IBM PC compatibles market I'm afraid, and as such, cannot be con-



I'm afraid, and as such, cannot be connected to Commodore's Amiga computer. Nice try Pete, but it simply won't work.

## ■ HELP! Portable link

I have a Cambridge Z88 portable computer, which is quite satisfactory for my everyday computing requirements. The problem is that there is a limited amount of memory on the unexpanded computer and this very quickly gets used up.

Also, I would like to save files on disk to safeguard against battery failure. Now I am aware that there are standard packages for the Z88 PC link and Z88 BBC link (I have also seen an Amiga Z88 link) but I have not come across a similar package for a Z88 Spectrum link (well, fancy that! - Uncle TT), do you know if one exists? If not, how can I go about making one?

I have a 48K Spectrum with an Interface 1 and a Disciple interface with disk drive. Can you let me know how the RS232 serial cable is wired to allow communication. Please, could you also print a sample program for both computers.

Can you please advise me on the use of rechargeable batteries on the Cambridge Z88. I have read somewhere that the voltage these give is not suitable for my machine, but it seems a little strange that the designers of the Z88 portable didn't take this into consideration. What do you think?

David M. Turvey, Enfield, Middlesex.

As far as I know, there is not a single manufacturer or supplier of a link to connect the Z88 and Sinclair Spectrum. I guess the logic is that if you can afford the Z88, you probably own a machine slightly more upmarket than the Spectrum.

However, as you have an RS232 port, all is not lost. You need to make a cable to connect the two machines - but then you know that already - and here's how to do it...

Acquire two connectors one for the Spectrum end, one for the Z88. I must confess a lapse of memory, and I cannot remember the type of connector built into the Interface 1. No matter. Maplin is an excellent supplier of all things connector-ish and can be contacted on 01-748 0926.

Solder these connectors to a length of cable with the following connections: 2 to 3, 3 to 2, 4 and 5 together at each end and 6, 8 and 20 together at each end. In order to transmit files, you're going to need some communications software for both machines. Probably the best source for this would be the reader classifieds in Shopping Express. You could try an advert yourself - for free!

Although the rechargeable batteries situation may seem strange to you, in fact it is one which applies to many portable computers. The Amstrad PPC portable PC is an example. There simply isn't enough muscle in nickel cad-

mium batteries to successfully drive those machines. It is possible to make a slight circuit change to the PPC to enable it to use ni-cads, but I'm not about to tell anyone how to do it - I don't want to be responsible for wrecked machines and breached guarantees.

## ■ HELP! PC OAP

I have recently become the owner of an old IBM PC model 5150, complete with an IBM 5151 mono monitor. After reading *Express*' article on PCs in issue 62, I decided to put pen to paper in the hope that you could clear up the following queries for me:

1. The machine came with its original monochrome display-printer adapter board. Am I correct in thinking that this is in fact a Hercules video adapter and as such, will work with software specifying a need for Hercules?

2. Could my monochrome monitor cope with CGA and EGA if I fitted the appropriate graphics adapter? If the answer is yes, am I right in believing I could run the software requiring CGA/EGA with the colour signals being displayed in one of 16 shades of green?

3. The disk controller card has a 37-pin female D-type connector out of the back of the machine. Is this there in case

you want to connect an external drive?

4. Why does 64K of memory consist of eight chips on the system board and yet nine chips are required to make 64K on my extension card?

Andrew Collis, Edginswell, Torquay.

1. No. Hercules is a high resolution video adapter card developed by a third-party widget manufacturer. In order to provide your computer with Hercules graphics capabilities, you must purchase and plug in one of these cards.

The video adapter as standard in your machine is known as MDA, and it is the basic text-only display present in all PCs.

2. Yes and no. With a CGA card installed in your machine, the monochrome monitor will provide you with a 'colour' picture consisting of grey scales. EGA is a different kettle of display standards altogether, and requires an EGA-compatible monitor in order to display anything.

3. Yes. Although the more usual method employed to connect a second drive is to run a second cable - twisted, in order to distinguish between the two drives - from the 34-way pin connector on the card to the drive.

4. Aha, that lovely old chestnut! Although only eight chips are necessary

to create 64K of RAM, the ninth is used by the PC as a parity check to guarantee the validity of data coming from memory. ■

## ■ HELP! ST internals

I own an Atari 520STM with a third-party 1Mb drive and an Atari SF354 0.5Mb drive. Can you tell me if it is possible to replace the drive mechanism of the Atari drive with one of the many 1Mb internal-replacement drives advertised for the 520STFM?

If this is possible, which make of drive unit should I buy? I have seen drives advertised from NEC, Citizen, Epson and others, and I am concerned about how protected software will operate with these different units.

Andrew Bradbury, Fearnhead, Warrington.

Perfectly possible I should think, although the SF354 case may require a modicum of re-modelling in order to create an outlet for the disk eject button of a replacement mechanism.

One of the best replacement-drive mechanisms is that marketed by Evesham Micros. The device costs a very reasonable £79.95 and is of quality construction. Contact Evesham on 0386

## ■ HELP! Monitor mayhem with just a smidgen of cheek!

I've got lots of monitor questions:

1. Is RGB output as sharp as SCART?

2. Out of RGB, composite and TTL, which of these offers better clarity?

3. There are a few monitors in my price range: Commodore 10845, Phillips CM8833 and the Sony KV TV/monitor. Which is the best?

4. How do I get stereo from my STE?

5. When does the light gun for the STE come out?

6. Has the Cruiser joystick got autofire?

7. Is the Philips 8CM852PRO any improvement to the 10845?

8. What is the 1084P?

9. My Multiface is incompatible with my STE. What should I do?

10. How can I make an autofire circuit for a joystick?

11. Is the Datel copier any competition to Blitz Turbo?

12. Are you handsome?  
Geoffrey Chan, Surrey

Phew! A bumper crop of questions there, kids.

1. RGB means red, green,

blue and is the raw, unmodulated, untempered-with signal emanating from your computer, other user's computers and devices that produce displays in general. Scart is just a form of proprietary-electronics connector and the two have nothing in common.

What may be confusing you is that TVs occasionally come with Scart sockets attached, enabling you to plug your computer in to that rather than via the co-axial connector. This is usual when composite signals are accepted by the TV - the Scart connector is incidental and could be DIN, D-plug or any one of a thousand others. So, to answer your question - RGB is sharper.

2. Almost the same question as the last. Composite and RGB are display methods involving red, green and blue with various sync and luminance signals in the former, and raw red, green and blue in the latter.

What is more, TTL

means Transistor Transistor Logic and it is the correct (or at least one way) of describing digital 5V level electronics. You're confused because some monitors are TTL while others are analogue (i.e. of varying voltage), right?

Of the first two, RGB offers greater clarity because there is no mixing of the signals. Indeed Composite is, as its name suggests, a homogenised collection of signals, which, while better than TV signals, are not as good as RGB.

3. The cheapest. I've used the Commodore and it is fine but perhaps it would be nice to have the combined Sony monitor and TV? Only you can answer that.

4. By taking signals from the sound pins of the monitor outlet (full pin-out specs are at the back of the STE manual) and feeding them into a standard domestic stereo amplifier such as your Ghetto.

5. Who knows?

6. No.

7. In price, probably.

8. I've absolutely no idea!

9. Write to Romantic Robot explaining the problem. These guys are good guys, and good guys resolve their customers' problems. If there are enough sufferers, then no doubt Romanic Robot will upgrade the Multiface to take into account changes in the STE.

10. By tying down one of the fire buttons to the earth lead in the joystick of your choice. If you want this circuit mode to be switchable, then include a switch in-line between the fire button and earth.

11. I should say it's the next logical progression for these devices. Any device that emanates from manufacturer B yet purports to be able to perform the same operation as that of manufacturer A and at a different price, can be deemed to be competition.

12. Only my adoring Techtipsters can answer that one...





• Howard Fisher

**B**eing a software company in the consumer market in the Eighties was a volatile proposition. They came and went like England cricket captains, often earning spectacular profits before disappearing with equally spectacular debts. But if sheer numbers are anything to go by, one outfit, started in a back bedroom in Dorking in 1983, has outdone all the big-name games houses – by writing budget software for a machine described as a dodo when it came out in 1985.

The company is Locomotive; its most famous creation is *LocoScript*. By virtue of this software being bundled with Alan Sugar's PCW, 'the word processor for less than a typewriter', more than 1.3 million people are familiar with the clear opening menu-cum-directory. That is a user base almost as large as the population of Northern Ireland.

The software has become the favourite of just about every journo, literary hack and home letter-writer in the country. Such is its fame that as well as the Jeffrey Archers and Johnny Speights of this world, even the caddish writer played by Trevor Eve in a BBC drama series, *A Sense of Guilt*, has *LocoScript* chugging away in his study. And *LocoScript* is marching steadily eastwards, armed with Urdu, Arabic

the BASIC interpreter (an adaptation of the original, first written in the back room in Dorking). And they finished the task in time and under budget.

That machine was the CPC 464, and the original ROMs are still being shipped today. The secret of success was in a drastic decision that Locomotive made early on: to ditch the 6502s Amstrad had bought in and base the machine on the Z80 chip instead.

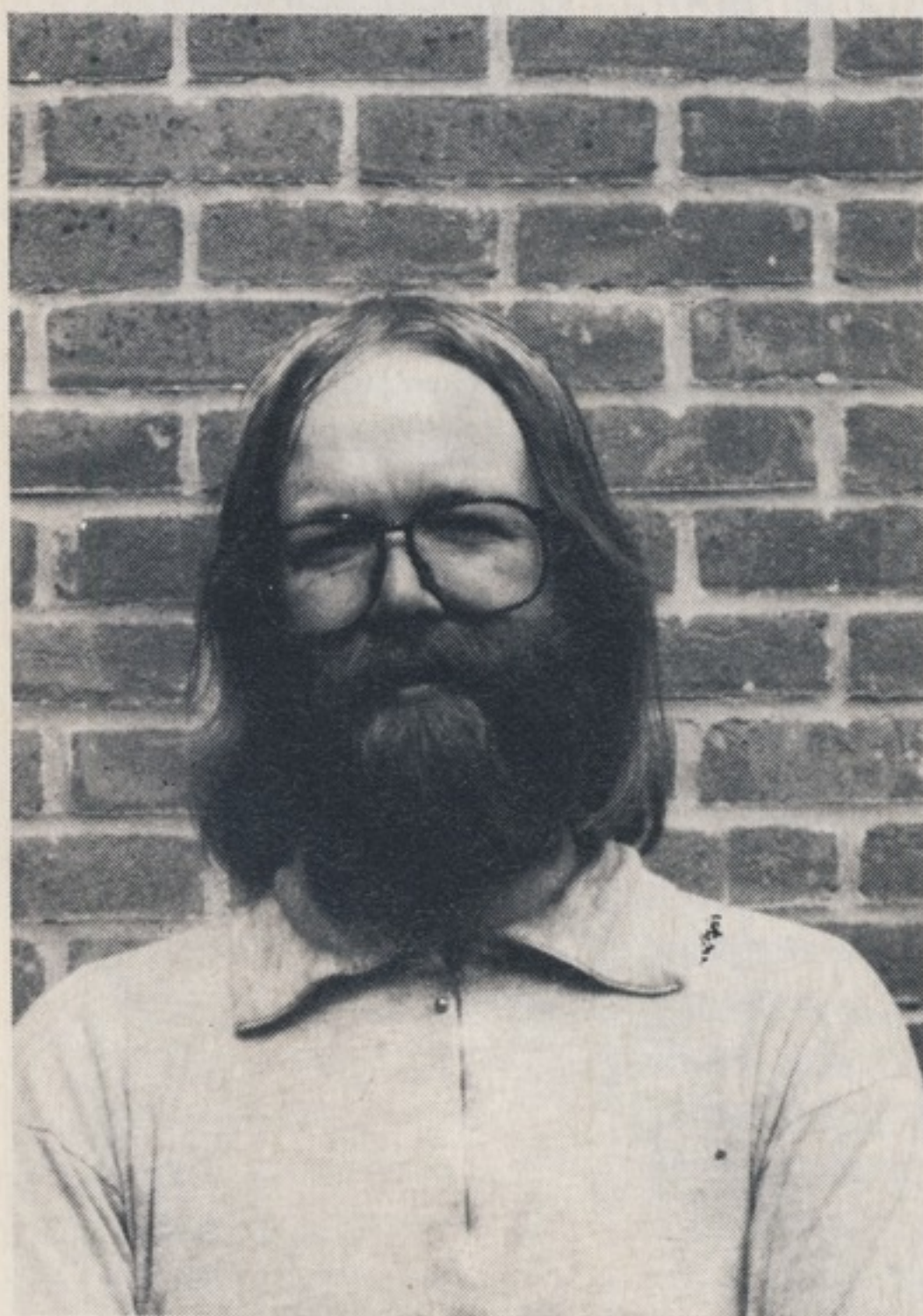
"Amstrad agreed it was the right move, even though it meant throwing away the 6502s, because of the end result – getting the project done to specification, on time and within budget. This sort of pragmatic approach suits Amstrad's style very well," comments Fisher.

Another factor that speeded things up was that the BASIC interpreter with the CPC was based on that already written by Clayton and Hall. And the CPC continues to sell well in virtually its original form...

### WORD GETS ROUND

In 1985 Alan Sugar had the idea of bringing out a word processing system. He'd seen similar machines selling in tens of thousands in Japan on one of his frequent trips there, and was convinced the same thing could work in Britain. The price he had in mind was £299 –

# LOCOMOTIVE POWER



• Richard Clayton

**Locomotive Software started out in a back room in Dorking, and now produces the UK's biggest selling word processor. Raj Chatterjee went to find out how Locomotive got up steam...**

and Farsi versions in addition to the Greek and Cyrillic versions that come as standard on version 2. The PCW is the machine to be seen with in what used to be called the Eastern bloc, and even Boris Yeltsin, the Soviet reformist, is said to be putting together his autobiography on his Amstrad.

Yet Locomotive remains a small company – just 25 employees, many of them working purely on the administrative side, coping with the massive mail-outs that will be required when the PC version of *LocoScript* hits the market in a couple of weeks' time.

### THE STORY BEGINS

The story began in 1983. Richard Clayton and Chris Hall were writing a BASIC interpreter for an Acorn man, Howard Fisher – subsequently to become their marketing manager. The BASIC interpreter was to become Mallard and the company Locomotive – not because of any latent train-spotting tendencies in either of the founders, but because the steam train conjured up images of speed combined with undoubted graceful elegance.

Amstrad was thinking about a cheap 6502 home computer bundle at the time, and approached Clayton and Hall over a problem with the design, which by that time was well advanced. Roland Perry, in charge of rescuing the development, had been given several quotes for the job by well-known names in the computer world, all of them far too high. Clayton and Hall took on the job and not only rescued the project, but along with MEJ Electronics, produced the hardware, did the overall firmware structures and wrote

around a thousand pounds less than the cost of assembling a word processing system from scratch at the time.

Through its contacts with Locomotive, Amstrad knew that the company was capable of producing a good word processing package that could be used by someone completely unfamiliar with computers. The software half of Data Recall, linked to MEJ and subsequently to provide many of Locomotive's early employees, had produced arguably the first disk-based word processor in Britain in 1976 – the Data Recall Diamond, on the now-obsolete 8-inch floppy disks.

The brief Locomotive was given for the word processing software remains a secret, thought Fisher admits it was brief, even as briefs go. It is generally thought that Alan Sugar demanded, without further elaboration, something that 'could write letters'. Well, Locomotive produced that and more.

The influence of the company on Amstrad was felt again. The planned machine had 128K of RAM: not enough, Locomotive felt. RAM was cheap in the early Eighties and the machine was expanded to 256K.

Richard Clayton, the architect of *LocoScript*, wanted to produce a system that was as foolproof as possible; something that didn't depend – as did *WordStar*, the 'standard' of the time – on memorizing lists of arcane keystrokes. The first thing the user would see would be, logically, the list of files on the disk, rather than an unfriendly prompt. The whole system was to be menu-driven, but would provide keystroke shortcuts to give the developing expert ways of circumventing the slow-but-sure pop-ups. ➤



★ **STAR PREFERRED CORPORATE SPECIALIST NATIONAL DEALER** ★

£50.00 SOFTWARE VOUCHER

**FREE HYPERDRAW/**

**FREE Pocket Calculator with every AMIGA**

**A M I G A**

**A500 BAT-PACK**

**INCLUDES:**

- Batman The Movie • New Zealand Story • F18 Interceptor • "D" Paint II
- Workbench 1.3 • Kickstart 1.3
- Amiga Basic • Desktop Utilities
- New Tutorial Pack • TV Modulator

**£379.00**

**WITH TENSTAR PACK  
£399.00**

**WITH EVERY ST & FREE**

**STAR**

**STAR RECOMMENDED CORPORATE DEALER**

**HOME AND BUSINESS SERIES**

£

LC-10 9 PIN MONO.....£153.00  
INC VAT

COMMENT: EXCELLENT NEAR LETTER QUALITY EVEN IN ITALICS MODE

LC-10 II MONO.....£175.00

COMMENT: 25% FASTER, VERY ACCURATE LINEFEED FOR GRAPHICS

LC-10 COLOUR.....£197.00

COMMENT: LC-10 SPECS., COLOUR FEATURES NOW WELL SUPPORTED

LC-15 9 PIN MONO.....£306.00

COMMENT: IDEAL FOR LONG PRINT RUNS AND LABEL PRINTING

LC24-10 24 PIN LQ.....£239.00

COMMENT: LETTER QUALITY, EXTENSIVE FONT RANGE INCLUDING SCRIPT

LC24-15 24 PIN LQ.....£383.00

**Approved by  
HEWLETT PACKARD  
LASERJET SERIES II  
(and compatibles)**

**SUPER  
CARTRIDGES**

**PostScript**

**PostScript Emulation Cartridge 35 Font Families Requires only 2 Mbytes of memory ONLY  
£545.00 plus VAT**

**25 cartridges in 1**

**Fonts from 25 different Cartridges in one  
172 Fonts and 20 complete Symbol Sets  
Supports Portrait and Landscape printing  
ONLY £359.00 plus VAT**

**HPGL Plotter CART**

**Full HPGL Plotter Emulation 20 Black pens in user defined sizes of 0.003" to 0.16"  
Compatible with ALL major CAD / CAM software packages Plotting speed upto a  
100 times faster ONLY £305.00 PLUS VAT**

**SPECIAL EDUCATIONAL DISCOUNTS AVAILABLE!**

**CLASS  
of the 90's**

**FREE  
F18  
INTERCEPTOR  
worth  
£24.95**

**EDUCATION  
PACK**

**PACK BREAKDOWN**

**HARDWARE**

£

INC VAT

Amiga A500 Computer.....399.99  
Midi Master Interface .....34.99  
TV Modulator .....24.99

**SOFTWARE**

Tutorial Pack .....  
Deluxe Paint II.....49.95  
Publishers Choice .....99.95  
Maxiplan 500.....99.95  
Superbase Personal .....59.95  
Dr. T's Recording Studio .....49.95  
Workbench 1.3 .....  
Kickstart 1.3 .....  
Desktop Utilities .....14.99  
BBC Software Emulator .....49.95  
Amiga Basic Language .....  
Amiga Logo Language .....82.00

**ACCESSORIES**

Mouse Mat .....4.39  
10 Blank 3.5" Diskettes .....9.99  
Disk Wallet .....12.95  
1 yr. Sub to Amiga User .....23.00  
Education support file  
(after 1 yr sub to Amiga User)

**TOTAL RRP = 1016.99**

**PACK DISCOUNT = 437.00**

**PROMOTION PRICE = 579.99**

**OUR PRICE = £535.00**

**BUSINESS, SCIENTIFIC, EDUCATION  
AND VIDEO GRAPHIC SOFTWARE**

ST PC Speed .....£255.00  
(IBM PC Emulator)  
ST Mega Co-processor .....£125.00  
ST Macintosh Emulator .....£229.00  
(Runs 20% faster than a Mac Computer)  
Amiga Macintosh Emulator .....£229.00  
Cameron A4 Scanner (AM/ST) £459.00  
Amiga Flicker Master.....£12.00  
Amiga DOS to DOS.....£39.95  
(MS DOS File Converter)

LC10 Mono ribbons .....£3.50  
LC10 Colour ribbons .....£6.00  
LC24-10 Mono ribbons.....£4.50  
FR/XB Mono ribbons .....£12.00  
Atari 1029 Mono ribbons .....£4.95  
100 x 3.5" disc box .....£7.95  
10 x 3.5" DS/DD discs .....£7.35  
60 gsm x 2000 sheet paper .....£16.95  
85 gsm x 1000 sheet paper.....£12.95

**520 STE  
EXPLORER PACK  
£279.00**

**520 STE  
POWER PACK PLUS  
£365.00**

**1040 STE  
HYPER PACK  
£459.00**

**MEGA 1 ST  
HYPER PACK  
£489.00**

**PORTFOLIO PORTABLE PC  
£235**

**FREE!! Utilities and tools pack with every ST purchase.** Software Blitter, ST Diagnostics, Disk Editor/Custom Formatter, Disk Boot Construction Set, Alarm Clock, Quick Formatter, Calculator, Custom Format Disk Duplicator, Printer Customiser Tool, Desktop Games, ARC Construction Set, System Selector, 50/60 HZ Switcher and Synchronizer, Snapshot Dumper, RAM/Print Spooler, Word-processor

**AND MUCH MUCH MORE!!**

**AMIGA  
STARTER KIT**

**£59.95**

Includes

**KINDWORDS WORD-PROCESSOR**

with 100,000 online Spell Checker, 470,000 Word Thesaurus, Colour Graphics and Professional Typefaces supports LC10 Colour Printer

**FUSION PAINT**

An advanced feature packed Art Package  
**CRAZY CARS/MINIATURE GOLF/SUPER SKI**

Three top quality arcade games

**\*\* All packed in one presentation box \*\***

**AMIGA ADDITIONS**

**A500 3 1/2" 1 Meg Drive  
£75.00**

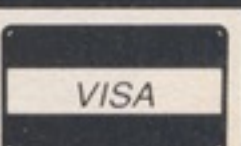
**1/2 Meg A500 RAM Upgrade  
with switch & clock.....£84.00  
without clock.....£69.95**

**All prices include VAT**

**COMPUTERHOUSE UK**

**TEL: (01) - 731 - 1276**

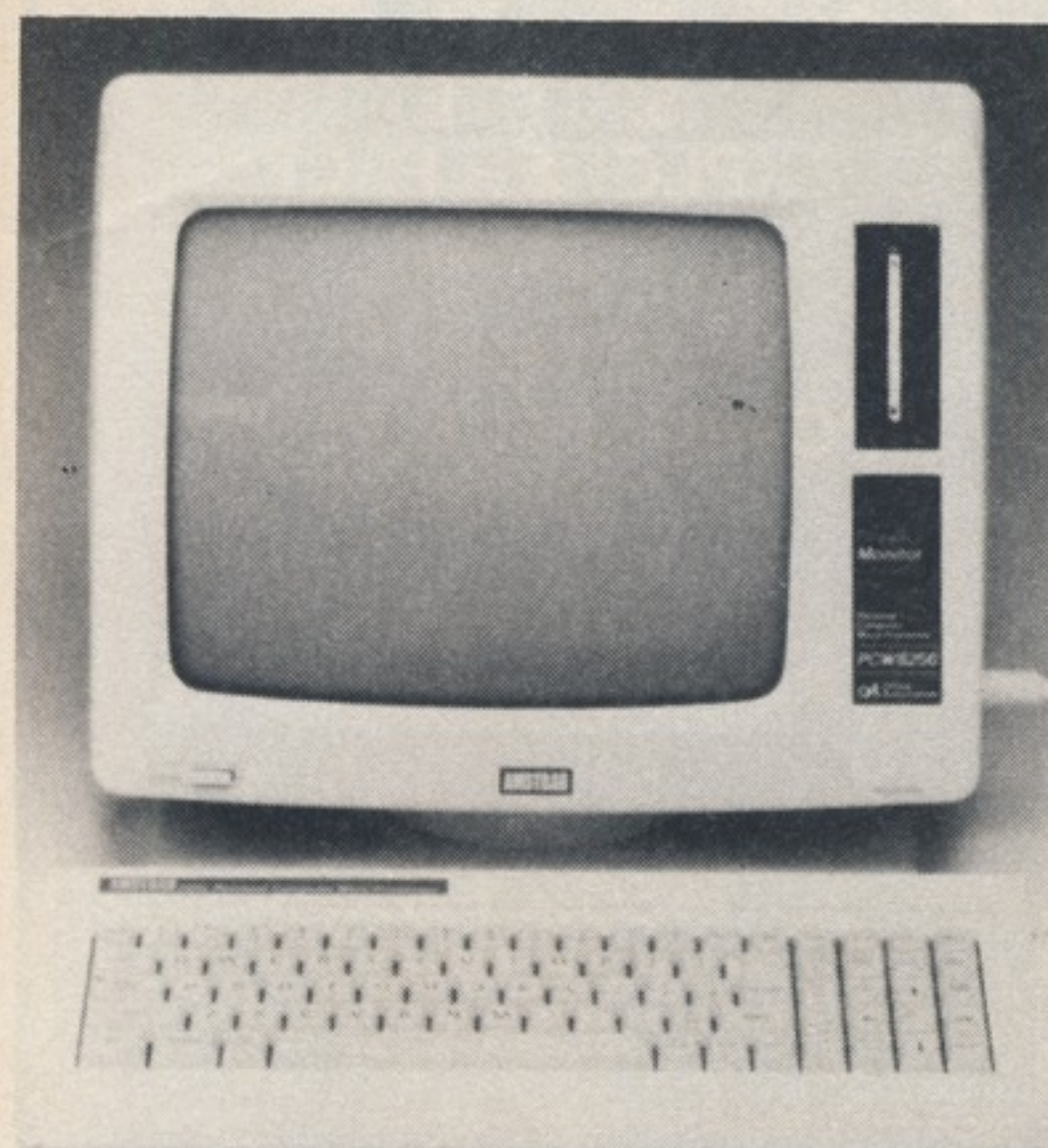
**14, ROMILY COURT, LANDRIDGE ROAD, FULHAM, LONDON SW6 4LL**







• Locomotive's telephone support is one of its strong points



• The springboard of Locomotive's success: the Amstrad PCW

"We wanted to make it quite clear to the user what was going on all the time," says Clayton. "That's why when *LocoScript* scrolls, it goes a line at a time, instead of jumping up in paragraphs. Jerky movement like that just makes you lose your place."

Similarly, when text is cut or copied, *LocoScript* makes it quite clear what's happening by marking out all the text in reversed-out lettering and removing it or copying it smoothly, rather than at a stroke, so that the user can see what's going on – and stop things in mid-stream if they're going wrong, instead of being presented with an irreversible *fait accompli*.

This emphasis on showing what's happening stage by stage makes *LocoScript* undeniably slow, and has led to criticism of the program by some 'experts' in favour of faster, less friendly word processors. But Clayton is unrepentant: "We know that most users are just confused by things that happen suddenly".

And, as Howard Fisher points out, the *LocoScript* system is one that has been adopted by hitherto command-driven programs. *WordPerfect* is just one example of a mainstream word processor that is adopting a *LocoScript*-like standard with keyboard shortcuts in its latest incarnation, version 5.1.

The usual complaint of the computer jounos being shown *LocoScript* on the PCW was 'yes, I'd quite like it, but I can't think of anyone else who would'. Just to remind you, there are now 1.3 million anyone elses who did.

## GOING IT ALONE

Despite the success of *LocoScript 1* it was clear that some people found it had niggling shortcomings – particularly the speed, ability to work with other printers, and handling of layouts. Locomotive – spurred on by its success in marketing *LocoMail* and *LocoSpell*, two *LocoScript* add-ons that Amstrad's efforts at marketing had encouraged the company to take over and do itself – made a big decision: to design and market a bigger, better successor itself.

The result was *LocoScript 2*, a program that, by PC standards, offered functions unheard of at the £20 price tag: Greek and Cyrillic, mathematical and scientific symbols, printer support for just about any machine ever released, and faster and smoother operation than version 1. Why the modest asking price?

"We wanted to make money, of course," says Fisher, "but without exploiting the users. The competition to *LocoScript* at the time all cost about £70 so we wanted to make something that was such a good buy people would have no reason for buying otherwise. Hence the £20 tag.

"We wanted to bring word processing to the person buying software out of taxed income, not just businesses – though 40 per cent of our sales go to businesses now."

Locomotive's innovative approach to writing support software ensured entry into lucrative markets most companies had dismissed as too esoteric to bother about. The Cyrillic and Greek capability is one example: the machine has made itself an essential for translators and students, and has given Locomotive a head start into the exploding Eastern bloc market. Again, the Arabic, Urdu and Farsi versions of *LocoScript 2* are proving very popular in the so-called

'minority' markets of the Middle East: it is sobering to consider that the population of Pakistan alone is 80 million, far greater than the UK's 55 million.

Another illustration of its ability to capitalise on 'trivial' markets is its highly successful range of add-ons such as *LocoKey* (a program that lets you configure the keyboard to make any key produce any character) and *LocoChar* (a set of alternative printer fonts to the standard dot-matrix pattern). They even work in Cyrillic and Greek – another of those 'unimportant' details that actually do matter to users.

## NOT DEAD, NOT EVEN RESTING

The trickle of major new software for the PCW is almost dried up these days – apart from Locomotive. 'A significant new add-on to *LocoScript*' is promised for later this year. The logical successor to the company's successful 50,000 selling database add-on, *LocoFile*, would be a spreadsheet.

*LocoSpread*? Fisher won't give any clues; Locomotive never announces a product until it is working and ready to demo, unlike some big companies you could name – part of its cautious approach to marketing.

Another reason for its success is its attitude to customer support. Written technical enquiries are dealt with unfailingly, as are telephone queries, by a real person rather than a recorded message in Santa Barbera – though the company isn't desperately keen to encourage people who can't be bothered to read the manual to get free tuition over the phone!

Locomotive's latest venture is the PC version of *LocoScript* – mainly because of demand. There are thousands of writers who want, for example, to use a portable PC, but don't want to leave their familiar environment on the PCW at home; or business upgraders who also want to retain that comfy *LocoScript* upbringing.

"There are two reactions to PC *LocoScript*," says Fisher. "One says, 'you're mad; there are already a million PC word processors'. The other says, 'why didn't you do it two years ago?' ". Whatever, if Locomotive captures just 10 per cent of the PCW upgraders, then *LocoScript PC* would become the biggest selling word processor in the UK.

But the fact that they didn't plunge into the PC market two years ago, reckons Fisher, is a demonstration of the philosophy that has made the company so successful; caution and care in an age when so many companies have plunged headlong into abject failure.

"We could have borrowed money two years ago to finance *LocoScript PC*, but it would have been a big risk. We prefer to go one step at a time, when the time is right."

This company philosophy has worked wonders in the PCW market, one of the steadiest and most cautious of all the home computer sectors: sales have increased continuously and steadily since day one back in Richard Clayton's back room, and turnover was £1.3 million last year. When *LocoScript PC* comes out it will be interesting to see how the 25-person outfit from Dorking compares with the big boys of the PC world – the WordPerfect Corps, the WordStars and the Microsofts. But Locomotive's careful and cautious approach doesn't seem likely to go far wrong. ■

## STEAMING THROUGH THE OPPOSITION

Locomotive's *LocoScript* has sold more than 1.3 million units – arguably making the company the UK's most successful business software house. With add-ons such

as *LocoMail* and *LocoSpell*, and an upgrade to the original selling for as little as £20, the opposition had a tough time. After the 50,000 selling database, *LocoFile*, can we expect to

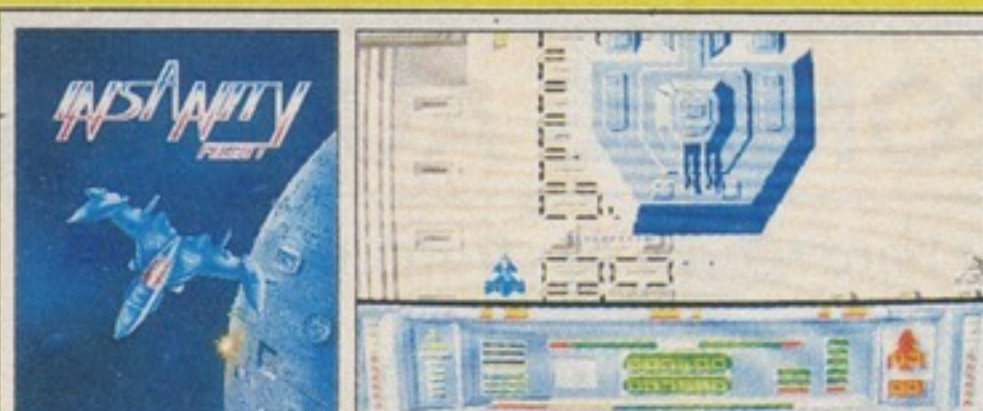
see a *LocoSpread* on the cards? Whatever, with turnover running at over £1.3 million last year, the company is now setting its sights on the PC market.



# FREE! TENSTAR PACK WORTH OVER £229!



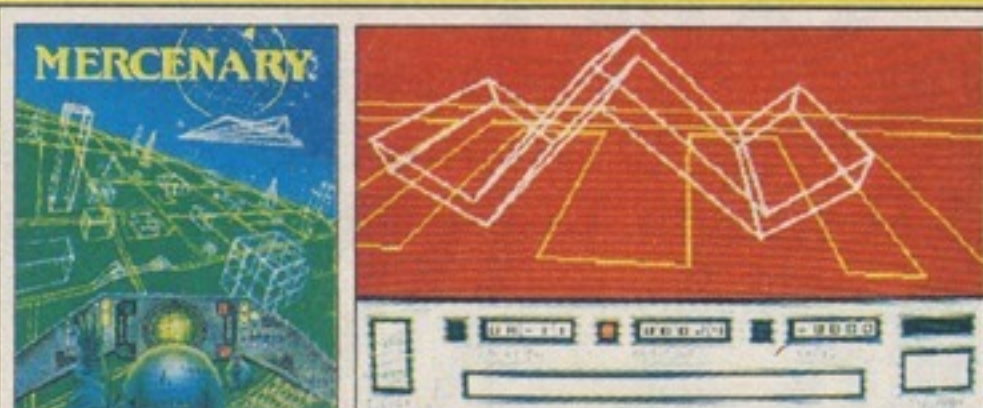
FREE! - AMEGAS - by Players



FREE! - INSANITY FIGHT - by Microdeal



FREE! - ART OF CHESS - by SPA



FREE! - MERCENARY COMP - by Novagen



FREE! - BARBARIAN, ULT WARRIOR - by Palace



FREE! - TERRORPODS - by Psygnosis



FREE! - BUGGY BOY - by Elite



FREE! - THUNDERCATS - by Elite



FREE! - IKARI WARRIORS - by Elite



FREE! - WIZBALL - by Ocean

# Commodore AMIGA



ONLY  
**£3.34**  
PER WEEK  
RETURN COUPON  
FOR DETAILS

# £346.95

+VAT =  
**£399**

INCLUDES  
FREE UK  
DELIVERY

The Amiga 500 is one of a new breed of technologically advanced computers, which are now emerging as the new standard for home computing, based around the new Motorola 68000 chip. The A500 has 512K RAM and a 1Mbyte double sided disk drive built-in. It can be connected directly to a wide range of monitors, or to a domestic TV set through a TV modulator. Designed with the user in mind, the A500 features a user friendly WIMP environment and comes supplied with a free mouse. And, when you buy your Amiga from Silica Shop, the UK's No1 Amiga specialists, you will experience an after sales service that is second to none, including a technical support helpline and free newsletters and price lists. Return the coupon below for our current information pack, which will give details of the Silica service and the very latest Silica Amiga offers. E&OE.

## WHY SILICA SHOP?

Before you decide when to buy your new Commodore Amiga computer, we suggest you consider very carefully WHERE you buy it. There are MANY companies who can offer you a computer, a few peripherals and the top ten selling titles. There are FEWER companies who can offer a wide range of products for your computer as well as expert advice and help when you need it. There is ONLY ONE company who can provide the largest range of Amiga related products in the UK, a full time Amiga specialist technical helpline and in-depth after sales support, including free newsletters and brochures delivered to your door for as long as you require after you purchase your computer. That one company is Silica Shop. We have been established in the home computer field for ten years and can now claim to meet our customers requirements with an accuracy and understanding which is second to none. Here are just some of the things we can offer you:

**THE FULL STOCK RANGE:** The largest range of Amiga related peripherals, accessories, books and software in the UK.

**AFTER SALES SUPPORT:** The staff at Silica Shop are dedicated to help you to get the best from your Amiga.

**FREE NEWSLETTERS:** Mailed direct to your home as soon as we print them, featuring offers and latest releases.

**FREE OVERNIGHT DELIVERY:** On all hardware orders shipped to Silica Shop customers within the UK mainland.

**PRICE MATCH PROMISE:** We will normally match our competitors offers on a 'same product same price' basis.

**FREE TECHNICAL HELPLINE:** Full time team of Amiga technical experts to help you with your technical queries.

But don't just take our word for it. Complete and return the coupon below for our latest Amiga literature and begin to experience the Silica Shop specialist Amiga service.

## PHOTON PAINT PACK

A500 Computer	£399.99
TV Modulator	£24.99
Photon Paint	£69.95
TenStar Pack	£229.50
<b>TOTAL RRP:</b>	<b>£724.43</b>
<b>LESS DISCOUNT:</b>	<b>£325.43</b>
<b>PACK PRICE INC VAT:</b>	<b>£399</b>

## 1084S MONITOR PACK

A500 Computer	£399.99
1084S Colour Monitor	£299.99
Photon Paint	£69.95
TenStar Pack	£229.50
<b>TOTAL RRP:</b>	<b>£999.43</b>
<b>LESS DISCOUNT:</b>	<b>£350.43</b>
<b>PACK PRICE INC VAT:</b>	<b>£649</b>

## FREE FROM SILICA

When you buy the Amiga 500 from Silica Shop, you will not only get a high power, value for money computer, we will also give you some spectacular free gifts. First of all, we are now including a TV modulator with every A500 stand alone keyboard, so you can plug your Amiga straight into your TV at home (the modulator is not included with the A500+A1084S pack as it is not required for use with monitors). Secondly, we have added a free copy of Photon Paint, an advanced graphics package with an RRP of £69.95. Last (and by no means least!), so that you can be up and running straight away, we are giving away the sensational TENSTAR GAMES PACK with every A500 purchased at Silica Shop. This pack features ten top Amiga titles which have a combined RRP of nearly £230! Return the coupon for details.

## FREE TENSTAR PACK

Amegas	£14.95
Art Of Chess	£24.95
Barbarian, Ult Warrior	£19.95
Buggy Boy	£24.95
Ikari Warriors	£24.95
Insanity Fight	£24.95
Mercenary Comp	£19.95
Terrorpods	£24.95
Thundercats	£24.95
Wizball	£24.95
<b>TOTAL RRP:</b>	<b>£229.50</b>

INC VAT

## DO YOU OWN AN AMIGA?

If you already own an Amiga computer and would like to be registered on our mailing list as an Amiga user, let us know. We will be pleased to send you copies of our price lists and newsletters FREE OF CHARGE as they become available. Complete the coupon and return it to our Sidcup branch and begin experiencing a specialist Amiga service that is second to none.

## SILICA SHOP:

**SIDCUP (& Mail Order)** 01-309 1111

1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX

OPEN: MON-SAT 9am - 5.30pm LATE NIGHT: FRIDAY 9am - 7pm

**LONDON** 01-580 4000

52 Tottenham Court Road, London, W1P 0BA

OPEN: MON-SAT 9.30am - 6.00pm LATE NIGHT: NONE

**LONDON** 01-629 1234 ext 3914

Selfridges (1st floor), Oxford Street, London, W1A 1AB

OPEN: MON-SAT 9am - 6.00pm LATE NIGHT: THURSDAY 9am - 8pm

To: Silica Shop Ltd, Dept NCE 0290 1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX  
**PLEASE SEND ME FREE LITERATURE ON THE AMIGA**

Mr/Mrs/Ms: Initials: Surname:

Address:

Postcode:

Dept NCE 0290

Do you already own a computer  
If so, which one do you own?



# JOHN RUSSELL & CO

## VALUERS & AUCTIONEERS

### FORTHCOMING AUCTIONS

of computer hardware & electronic equipment

**Saturday 3rd February 1990**

CCL Unit 4, Garnett Close, Greycaines Trading Estate, North Watford

1200 lots of microcomputers & peripherals inc:

IBM & Compatible systems - IBM P/S 2 30,50,60 & 80 systems, Compaq 286 & 386, Deskpro & portable systems, Apple Mac Plus & SE systems, Laserwriters & other laser printers

Future Sale Dates:

**Saturday 17th February 1990**

Dacorum College, Marlowes, Hemel Hempstead, Herts

**Saturday 3rd March 1990**

CCL Unit 4, Garnett Close, Greycaines Trading Estate, North Watford

Viewing & Testing 9.00am / Sales Start 10.30am

For further details and catalogue please contact:

**01-681 5413**

Selsdon House, 34 Selsdon Rd, South Croydon, Surrey CR2 6PB

**SPECIALISING IN COMPUTER HARDWARE  
& COMMERCIAL EQUIPMENT**

#### COMMODORE AMIGA A500

##### BATMAN MOVIE PACK

Amiga A500, Workbench 1.3, Mouse, Extras Disk, Tutorial Disk, Owners Handbook, Basic Handbook, Mouse Mat, TV Modulator, Deluxe Paint 2, F18 Interceptor, New Zealand Story, Batman.

**ONLY  
£369.95**

##### BATMAN MOVIE + PACK

Amiga A500, Workbench 1.3, Mouse, Extras Disk, Tutorial Disk, Owners Handbook, Basic Handbook, Mouse Mat, TV Modulator, Deluxe Paint 2, F18 Interceptor, New Zealand Story, Batman, Ten Blank Disks, Disk Box holds 80 Disks, Vinyl Dust Cover, Microswitch, Joystick

**ONLY  
£389.95**

ALL AMIGA PRICES INCLUDE VAT, FITTED PLUG AND DELIVERY

#### ATARI 520STE

##### EXPLORER PACK

Atari 520STE, Mouse, Owners Handbook, Metacom Basic Rev D, Sourcebook + Tutorial.

**ONLY  
£279.95**

##### POWER PACK A

Atari 520STE, Mouse, Owners Handbook, First Basic, First Music, Business Organiser Software, 20 Great Games, Atari CX40 Joystick

**ONLY  
£359.95**

##### POWER PACK B

Atari 520STE, Mouse, Owners Handbook, First Basic, First Music, Business Organiser Software, 20 Great Games, Atari CX40 Joystick, Vinyl Dust Cover, Twin Joystick Extend Lead, Disk Box for 80 Disks, Ten Blank DS/DD Disks, Second Joystick

**ONLY  
£389.95**

Plus FREE!! with any of the above Atari Packs a Superb Software Starter Pack comprising: WordProcessor, Spreadsheet, Spellchecker, Word Count Program, Neochrome, Mono Monitor Emulator, Database, Towers of Hanoi Game, Virus Killer, Sensori Game, Fruit Machine Game

PLUS FREE with all Atari computers, Hyper Paint, Hyper Draw, Borodino RRP £79.00. Only whilst stocks last.

#### PERIPHERALS

STAR LC10 COLOUR PRINTER	STAR LC10 PRINTER	CUMANA CAX 354 AMIGA DISK DRIVE	PHILIPS CM8833 COLOUR MONITOR	CITIZEN 120D PRINTER	CUMANA CSA354 ST DISK DRIVE
£209.95	£169.95	£89.95	£239.95	£138.00	£92.95

ALL PERIPHERAL PRICES INCLUDE VAT, DELIVERY AND ANY LEADS NECESSARY TO CONNECT TO YOUR COMPUTER (PLEASE STATE)

#### SPECIAL OFFERS - WHILST STOCKS LAST

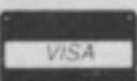
Commodore A501 RAM Expansion	£99.95	Deluxe Paint 2 Amiga	£19.95
Hyper Draw Atari ST	£9.95	Hyper Paint Atari ST	£9.95
The Works Platinum Edition Amiga RRP £149.95 only £99.95			



#### MAIL-CENTA

17, Campbell Street, Belper, Derby. DE5 1AP. Tel: 0773 826830

All prices include VAT and Delivery. However for orders under £10.00 please add a 50p handling charge. Personal callers welcome at our retail shop but please bring this advert as prices may vary. Closed Wednesdays. All items despatched same day whenever possible. Cheques may require a seven day clearance period. Prop. Martin Bridges



## TELEGAMES

**Europes Largest  
Stock of Video  
Games  
& Cartridges For**

**Still  
Europes No 1!  
Why Wait, Call in  
or order now.**



**"What Video Game"  
2 hour VHS film.  
Shows all the main  
game systems and  
over 400 games.  
Available now  
£14.95.**

**PC Super  
Grafx now in  
stock!**

**The leading Video game specialists.  
Send for lists (state make of game)**

**Telegames, Wigston, Leicester, LE8 1TE.  
Tel: 0533 880445 or 0533 813606  
or fax your order on 0533 813437**



**10<sup>th</sup> FEB 1990**  
10 AM to 6 PM

*the*  
*All Formats*  
**COMPUTER  
FAIR**

New Hall of The Royal Horticultural Society  
Greycoat Street, near Victoria Station, London

- 
- Thousands of hardware and software bargains
  - Meet Miles Gordon Technology
  - See the exciting SAM Coupé computer
  - Major Christmas stock clearances
- 

Stand sales: John Riding 0225·447453

*Admission £3.00*



## ■ Publish...

Thank you for giving me the chance to reply to the comparison between *Fleet Street Publisher 3* and *Calamus* (*Express* 63)

I fully understand that in a comparison the marking is the independent, subjective opinion of the writer. However in this comparison the marks – ticks or crosses – seemed to be at odds with the related copy in each comparison field.

In several cases where FSP/3 was marked down, the copy seemed to indicate a draw and in one particular area, Ease Of Use, *Fleet Street* appeared to be on top.

There are also some points in the article that I would like to correct:

**WYSIWYG:** The release version of FSP/3 will contain Ufonts (UltraScript outline fonts). These fonts are used for output and, optionally, for full WYSIWYG screen display.

Use of this option does NOT require the UltraScript PostScript emulator as Mirrorsoft has licensed the font scaling routines from Imagen who produce UltraScript. The current bitmap fonts may also be used as a faster alternative on screen.

**Fonts:** FSP/3 includes Times, Helvetica and Courier Ufonts typefaces, each in four typestyles – Roman, Bold, Italic and Bold Italic. The Lucida typeface family will be available in the FSP Deluxe upgrade which features the full UltraScript program. Additional font outlines packs can be added for the cost of £50-60 per family.

**Import:** As *Fleet Street* features PostScript compatibility we have added the Import Encapsulated PostScript option. Users will be able to merge PostScript files into a FSP page. GEM vector graphics are also supported.

We will of course send you a copy of the complete program and manual when it is finally released.

Jon Norledge, FSP Product Manager, Mirrorsoft Ltd.

## ■...and be damned

I would just like to take this opportunity to explain to Future Publishing in general, and Jerry Glenwright in particular, the differences between two words – 'review' and 'preview'.

A 'review' is an assessment of a finished product that usually comes in a shiny shrink-wrapped box with a bound type-set manual, one or more disks with printed labels, and a little card marked 'Registration Details'.

A 'preview' on the other hand, is an assessment of an unfinished product that usually comes in a brown envelope, with a loose-leaf bundle of photo-copied instructions, one or more disks with handwritten labels, and a letter asking the recipient to make a note of any bugs that need fixing.

I point out these seemingly obvious differences only because you seem not to be aware of their significance, for how else could you have printed your pre-



ture comparison of *Calamus* and *Fleet Street Publisher 3* in ST Format, and then rehashed it in shorter form, for NCE?

The version of *Fleet Street* that I have at the moment is considerably more advanced and full-featured than you 'review' suggests – and I received it before Christmas. Not only does it have outline fonts displayed on screen, but is also does not require Ultrascript to produce print quality every bit as good as, if not better than, *Calamus*.

Mirrorsoft tells me that the program will not be finished for at least another month, so can you please explain why you could not contain yourselves until then? Not only have you done both Mirrorsoft and potential purchasers of the package a disservice by jumping the gun, but you have also severely damaged your credibility.

*Calamus* may be a superb program, but as it is a full £260 more expensive (the £399 price you have been quoting is ex VAT) and does not offer PostScript compatibility. I feel that *Fleet Street* is a good deal more competitive than you suggest. I look forward to a proper review when you have received the final version.

W Haycraft, Camden Town, London

So, the truth is out: that I am a spotty-faced callow youth of 30-odd who spent the Eighties sending thousands of reviews to press in total ignorance of the difference between advance and finished products.

Thank goodness I have people like William Haycraft to put me straight. I live in hope that next week he will enlighten Future Publishing and myself on the difference between the two phrases 'constructive criticism' and 'patronising sarcasm', then perhaps both he and I can stop practising the latter.

Readers do, of course, deserve an explanation.

As far as I have been able to establish, the contention that *Fleet Street Publisher* came to us as some sort of unsolicited plain-wrapper package is an

# EXPRESS MAIL

**Britain's liveliest computing forum – packed with comment, controversy and conflict. Write and tell us what you think! Reach us at: Express Mail, 30 Monmouth St., Bath BA1 2AP**  
**Sorry, no personal replies, even with an sae.**  
**This week's replies written by Martyn Lester.**

ill-informed one. Jerry actually went to Mirrorsoft in November to be guided through a hands-on assessment of the product, as well as taking away a copy for further examination.

Had I thought for one moment that this version of FSP differed significantly from the proposed finished article, I would either have decided not to publish at all, or to run it clearly flagged as an early preview.

I am, of course, more than happy to print Jon's response to our review. But I have also asked him to reflect on how it came about that a journalist was demonstrated software now said to have been far from completion, and yet he came away with the impression that he was in a position to review what he had seen for two magazines.

Wherever it originated – and I am sure we both recognise it as an entirely

honest mistake – this breakdown in communication has resulted in 'a disservice' to *Express* as well as all the other parties concerned, and you may be sure that I am far from content with it.

To the most important consideration – accurately informing *Express* readers. We will reconsider a finished version of *Fleet Street Publisher 3* as and when we see it, and revise our published opinion as necessary.

## ■ Back to the 80s

I found the 'Exit the Eighties' article in *Express* 61 very interesting and agree with many of these industry dudes. Ian Andrew of Incentive sums it up: "It's all so bloody serious these days." The man is dead right and we, the purchasers, are suffering because of it.

Flicking through my disks, I am sad

## ■ Manual solution to the piracy problem

I commiserate with Z Dabbas and all those other programmers whose software is 'ripped off'. You will never stop unauthorised copies of software being passed around, because it is only human nature not to say no when one is being offered something for nothing. However, having obtained a pirate copy it is another matter to run the program in the proper manner without a copy of the manual.

About two years ago I wrote to FAST suggesting that if manuals were printed in a certain standard way, it would make them easier to read at the computer but very expensive to photocopy. At the same time, making them available at a price commensurate with the actual software would mean some extra return on their original outlay. FAST never bothered to reply. Acorn Computers, and some other companies, have concluded that at least some return can be realized by making manuals available at a price. You will find that having obtained a free copy of a software programme, most computer fans would pay up to £25 for a copy of the manual, thereby reconciling their conscience-smitten minds.

I agree with Z Dabbas – does the Z stand for 'Zapped'? – that a back-up should be allowed and this can be built in to the protection. However, even these are a source for the highly skilled, inventive, enquiring minds of the hackers to delve into and to break the coding pertaining to that program.

Finally, I am very glad to see realized a suggestion I made in 1984 to a now-defunct computer magazine for the inclusion of a free ad to readers. This can only bring you more readers, as it is so very interesting. Keep up the good work.

Peter Hughes, Bristol, Avon

I wonder if that's the reason the magazine you speak of is now defunct?







to discover that I actually enjoy playing 1983 text-only adventures on my old Dragon more than I do playing a 1989 mega-bucks film tie-in. And the soaring price of software...

I appreciate that all these big software houses, with their licence agreements, are bound to have hefty overheads, but back in the early days, when we were kids, the small, independent software houses were slinging hundreds of titles out for a couple of quid each.

OK, so a fair number of those were crap, but you could fill a couple of tape racks with games to show off to your buddies for the same price as one game today and there was a large enough selection of software to be able to find good stuff.

For instance, check the releases by Ultimate. And what about Salamander software - some of the best adventure software of all time? And these small companies, between them, were releasing games at a hell of a rate, with far more software per month than the Zimmerwielding, big-time outfits of today can come up with.

Pulling the old crystal ball from the filing cabinet, I see that unless the leisure

software industry brings back the attitudes of the early '80s they will all slide under the carpets of the, in my opinion, more deserving PD and shareware authors - and I'll never be able to afford even a second-hand Porsche by releasing a BASIC, text-only adventure.

*Zennan Green, Kingussie, Inverness-shire*

## ■Virus perversion

The computer virus has been with us for quite some time now and the letters pages of many magazines have been filled with rage and fury towards the authors of these programs.

I don't believe that these authors write them for a joke or even because they're evil and love to see people suffer, I believe that the virus writer does it for the fame and publicity his/her work will receive as it spreads itself around the globe. It's a little like planting a bomb on the underground and watching the television news with a kind of twisted pride that it's the bomb you planted.

The virus writer also gets a kick out of reading the problem pages. It could be their work that caused the user's problem and the answer to the letter may well men-

tion the virus' name.

I'm not angry at the fact that my Amiga has had the Lamer Exterminator copying itself onto nearly everything I've got, despite the time it took to check my collection of 80 or so disks. What does bother me, though, is the fact that I've had to put up with programs failing and files mysteriously getting corrupted for the last six months or so. I blamed the computer and spent some time thinking the machine was faulty.

What I'd like all you virus writers to do is to stop and think of the misery you're causing to thousands of users. Your programming talents could just as easily be turned to writing useful programs instead of destructive ones and you would gain respect for the work you do instead of contempt.

*David Carter, Woking, Surrey*

I suspect you may be right, in which case:

- a) You've just given the authors of Lamer Exterminator another fix;
- b) They don't give a damn about the misery they cause, so there's not much point in appealing to their non-existent better natures.

## ■Speccky appeal

Would you, if you could, please publish more details about The Speccky Sector (letters, *Express* 62)

*A Cox, St Clears, Dyfed*

You can contact Owen Brown at the following: 1 Roxwell Road, Chelmsford, Essex CM1 2LY.

## ■Against the law?

Could you please give me information with regard to keeping records on my computer and the Data Protection Act.

My wife helps run a Cub Scout group and I want to keep a record of the boys in the group on my computer. The data held is for group use only and contains information that would normally be kept in a card file system.

The record shows: Name and date of birth; Address and telephone number; School; Investment date; Date of transfer to Scouts; Awards - ie any badges earned within the group, such as swimming, homehelp, etc; The group the boy is in.

Am I breaking the law by keeping the above data on a computer file? I asked at the local Police Station and was told by an officer that he thought I would not have any problems, as my records do not contain information that is harmful or expresses an opinion on any of the persons named in the record.

However, another police officer tells me that the records contravene the Data Protection Act and should be erased.

The problem may seem minor, but I would appreciate your comments on how I stand. Am I breaking the law or not?

*K Taylor, Grimsby, South Humberside*

A tricky little blighter is Johnny Data Protection Act.

The opinion of our in-house DPA cognoscenti is that you are probably exempt provided that the boys and their parents agree to your keeping the files. However, these exemptions are a somewhat grey zone.

Get yourself copies of the explanatory leaflets that accompany the Act from: The Data Protection Registrar, Springfield House, Water Lane, Wilmslow, Cheshire SK9 5AX (Tel: 0625 535777). If you get anywhere near as lost as I did in this literature, contact the Registrar again and put the details of your case direct for a precise answer.

Assuming that your files are quite legal, you should in any case take precautions to ensure their security. Your cubs and their parents deserve not to be hassled even by someone as relatively harmless as a freelance woggle salesman, and there are far more unsavoury characters than that who might wish to access the names, addresses and other details you hold.

Your data should be safely locked away, or secure behind a proper password system.■

## ■Intellectual exercises for delicate consciences

I am new to computing and, therefore, my opinions may be a little half-baked. Nevertheless, I'd like to pass on a few comments about hacking.

While I, too, am against all forms of piracy, forgery and illegal copying, I am nagged by the feeling that I need to qualify that principle by adding that it seems to be all right as long as nobody makes any money out of it.

I mean, one cannot help but admire the guy who forged all those masterpieces and fooled the experts a few years back just for fun. If I had the expertise to produce a copy of a banknote I would be proud of my ability, notwithstanding the fact that to do so would still be a crime.

In an effort to combat the piracy of commercial products like watches, perfume, recorded music etc, we are told not to buy anything 'dodgy' in the hope that pirates will become extinct if they cannot sell their stuff. Fair enough, but what if the pirates give their wares away?

I confess to being in possession of half a dozen pirate copies of popular computer games, for which I paid nowt and, as far as I am aware, their antecedents cost nowt either. The cracker proudly announces his pen name in the titles and, presumably, does it for kicks.

What I am getting at is the fact that however resolutely I, and many more like me, refuse to accept such freebies, it will not have the slightest effect on those who crack for fun. It's a case of: 'Ta very much' when faced with the choice between a product costing £25 or a freebie.

I do not defend the pirate, for he is a menace. I defend people like me, with shaky principles, thin wallets and delicate consciences.

*Brian Douglas, Morecambe, Lancs*

The distribution of pirate software without money changing hands may be a partial salve to the conscience of the cracker - he or she can at least claim not to be a mercenary - but I cannot see that it changes the moral position of the recipient.

This whole area seem to be impossible to discuss without resorting to analogy, so let me put a case right now. If someone offered you a 'hot' wrist-watch but decided to give it to you without asking for any money, would it be any less

stolen than if you had paid for it? Of course not!

'Aha,' you are already saying to yourself, 'but when a wrist-watch is stolen, the rightful owner is down on the transaction by one wrist-watch. When I go home with a pirate game copy in my pocket, the programmers and their associates are no worse off than before. How can I be doing anything wrong?'

What the people involved in producing and selling the software would argue is that piracy is depriving them of something that they would otherwise have, that is the money which would be spent over the counter on those games if they were not being dished out down the pub or in the playground.

Creative people regard games (and all other copyright work) as their 'intellectual property', and the law agrees with them on this matter.

You may argue that you would never have bought the game anyway, so that in fact no-one is being deprived of your money. Again, this does not exactly leave you on the moral high ground. Apart from the purely legal aspects, software publishers will feel that piracy hurts them in another way - that it cheapens the public perception of the value of their work.

If the market were suddenly flooded with, let us say 5p Mars bars, then people would soon start thinking that 20p or so for a Twix was bit of a rip-off.

Piracy conceptually devalues work in much the same way, and if the games are being given away this actually works even more to the detriment of the genuine supplier than if they are being sold at half price.

If you don't want something enough to pay for it, the honest course is to do without it. A game is not one of life's essentials; it is not as if someone has cornered all the salt in the world and has priced it beyond your means so that you are obliged to steal some in order to live.

If you feel that software is over-priced, you can get that message across by simply not buying it - it is not a justification for going further and 'stealing' the program any more than the opinion that a tin of beans is overpriced acts as an excuse for shop-lifting it. If you think that piracy is wrong, stop acting as an accomplice for it!



## 520ST-FM SUPER PACK



The Atari Super Pack is ideal for you if you want to get off to a flying start with the best in entertainment software. The Pack includes a 520ST-FM with 1Mb RAM, a built-in 1Mb disk drive, over £450 of top games and a joystick. If you buy the Super Pack at Silica Shop, we will add our own ST Starter Kit (worth over £200), Free Of Charge. Return the coupon for details.

# £399

INCLUDING VAT

With SM124 mono monitor: £498 <sup>INC VAT</sup>

With SC1224 colour monitor: £698 <sup>INC VAT</sup>

### 1Mb DISK DRIVE £450 OF SOFTWARE

#### ARCADE GAMES

Arkanoid II	Imagine	£19.95
Beyond The Ice Palace	Elite	£19.95
Black Lamp	Firebird	£19.95
Buggy Boy	Elite	£19.95
Chopper X	Mastertronic	£9.99
Ikari Warriors	Elite	£14.95
Marble Madness	Electronic Arts	£24.95
Quadrailen	Logotron	£19.95
Ranarama	Hewson Consultants	£19.95
Return To Genesis	Firebird	£19.95
Roadwars	Melbourne House	£19.95
Starquake	Mandarin	£19.95
Test Drive	Electronic Arts	£24.95
Thrust	Firebird	£9.95
Thundercats	Elite	£19.95
Wizball	Ocean	£19.95
Xenon	Melbourne House	£19.95
Zynaps	Hewson Consultants	£19.99

#### SPORTS SIMULATIONS

Eddie Edwards Super Ski	Elite	£19.95
Seconds Out	Tynesoft	£19.95
Summer Olympiad '88	Tynesoft	£19.95

#### PRODUCTIVITY SOFTWARE

Organiser	Triangle Publishing	£49.95
-----------	---------------------	--------

#### JOYSTICK

Atari CX40 Joystick	Atari Corp	£4.99
---------------------	------------	-------

FREE ATARI BUNDLE VALUE: £458.97

# ATARI ST

## ST COMPUTERS

The range of Atari ST computers offers something for everyone. From the games enthusiast who wants the challenge of the very best in arcade action, to the businessman who wants to make financial forecasts or faultless presentations. The ST offers high quality graphics, sound and speed for the gamer, whilst providing a fast, user friendly and affordable solution to business. The ST is now firmly established in the home environment and boasts a wealth of users in education, local government, television, and a variety of different businesses. Software for the range stretches to cover applications as diverse as ENTERTAINMENT, ACCOUNTS, ART, COMMUNICATIONS, COMPUTER AIDED DESIGN, DATABASES, DESKTOP PUBLISHING, EDUCATION, MUSIC, PROGRAMMING, SPREADSHEETS, WORD PROCESSING and more. For a full list of the software available, as well as details of the ST range, complete and return the coupon below.

All prices correct at the time of going to press. E&OE

## 520ST-FM EXPLORER PACK WITH BUILT-IN 1Mb DISK DRIVE



The value for money offered by the Atari ST range is reflected in the Explorer Pack featuring the 520ST-FM computer with 512K RAM. The 520ST-FM computer now comes with a built-in 1 Mb double sided disk drive as well as a free mouse controller and a built-in TV modulator. The new 520ST-FM Explorer Pack includes the 520ST-FM computer, the arcade game Ranarama, a tutorial program and some useful desktop accessories. In addition, if you buy the Explorer Pack from Silica, we will give you the Silica ST Starter Kit worth over £200, FREE OF CHARGE. Return the coupon for details of our Starter Kit and of the full ST range.

# £260

ONLY £2.51 PER WEEK  
RETURN COUPON FOR DETAILS  
+VAT= £299

+ SM124 mono monitor: £398 <sup>INC VAT</sup>

+ SC1224 colour monitor: £598 <sup>INC VAT</sup>

## 1040ST-FM PROFESSIONAL PACK

### NOW WITH TV MODULATOR

For the serious home user and the small business, we are pleased to announce a new package based around the 1040ST-FM. The 1040ST-FM has 1Mbyte RAM and a 1Mbyte built-in disk drive. In addition, the 1040ST-FM now comes with a TV modulator built-in. (The previously available 1040ST-F was designed for use with a monitor only and did not come with a modulator.) This modulator allows the 1040ST-F to be plugged directly into any domestic TV set, and comes complete with a lead to allow you to do so. The new 'Professional Pack' from Silica includes the new 1040ST-FM with modulator plus four high quality software packages including a spreadsheet, database, word processor and programming language. This 'Professional Pack' software will enable you to get straight down to business with your new computer. In addition to this software (worth £384.84), if you buy the Professional Pack from Silica Shop, you will also receive the Silica ST Starter Kit (worth over £200), Free Of Charge. Return the coupon for further information.

# £499

INCLUDING VAT

With SM124 mono monitor: £598 <sup>INC VAT</sup>

With SC1224 colour monitor: £798 <sup>INC VAT</sup>



ATARI 1040ST-FM	(Computer)	£499.99
VIP PROFESSIONAL	(Spreadsheet)	£149.95
MICROSOFT WRITE	(Word Processor)	£149.95
SUPERBASE PERSONAL	(Database)	£59.95
BASIC DISK & MANUAL	(Language)	£24.98

NORMAL RRP: £884.82

LESS DISCOUNT: -£385.82

PROFESSIONAL PACK PRICE: £499.00

## 2Mb & 4Mb MEGA ST

The MEGA ST computers are styled as lightweight keyboard with a separate CPU, connected by a coiled telephone style cable. There are two versions of the MEGA ST, one with 2Mbytes of RAM and the other with 4Mbytes. Each version has a 1Mbyte double sided disk drive built-in to the CPU unit. The MEGA ST's do not come with modulator built-in and must therefore be used with a monitor. With every MEGA ST purchased, we will add the 'Professional Pack' software (worth £384.83) detailed above, plus the Silica ST Starter Kit (worth over £200) both Free Of Charge. Return the coupon for further details.

### 2Mb MEGA ST

£899 <sup>INC VAT</sup>

+ mono monitor = £998

+ colour monitor = £1198

### 4Mb MEGA ST

£1199 <sup>INC VAT</sup>

+ mono monitor = £1298

+ colour monitor = £1498



## DTP PageStream £149 <sup>+VAT</sup> = £171.35

Desktop Publishing (DTP) is one of the fastest growing applications for personal computers. We are pleased to announce a powerful low cost package for the Atari ST called PageStream. PageStream costs only £149 (+VAT=£171.35) and, because it works with an Atari 1040ST and a Seikosha SP-180AI printer, you can be up and running with a complete system for less than £1000. Some of the features of PageStream are listed to the right. If you would like further information on this program, complete and return the coupon below, ticking the 'DTP' box in the corner.

- TEXT-FLOW AROUND GRAPHICS
- ROTATION OF TEXT & GRAPHICS
- SLANT OR TWIST ANY OBJECT
- POSTSCRIPT COMPATIBLE
- TAG FUNCTION
- AUTO/MANUAL KERNING & HYPHENATION
- GROUPING OF OBJECTS

## DO YOU OWN AN ATARI ST?

If you already own an Atari ST computer and would like to be registered on our mailing list as an ST user, let us know. We will be pleased to send you copies of our price lists and newsletters FREE OF CHARGE as they become available. Complete the coupon and return it to our Sidcup branch and begin experiencing a specialist ST service that is second to none.

### SILICA SHOP:

SIDCUP (& Mail Order) 01-309 1111

1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX

OPEN: MON-SAT 9am - 5.30pm LATE NIGHT: FRIDAY 9am - 7pm

LONDON 01-580 4000

52 Tottenham Court Road, London, W1P 0BA

OPEN: MON-SAT 9.30am - 6.00pm LATE NIGHT: NONE

LONDON 01-629 1234 ext 3914

Selfridges (1st floor), Oxford Street, London, W1A 1AB

OPEN: MON-SAT 9am - 6.00pm LATE NIGHT: THURSDAY 9am - 8pm

To: Silica Shop Ltd, NCE 0290 1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX  
**PLEASE SEND FREE LITERATURE ON THE ATARI ST**

Mr/Mrs/Ms: Initials: Surname:

Address:

Postcode:

NCE 0290

Do you already own a computer  
If so, which one do you own?

DTP ☐

## WHY SILICA SHOP?

Before you decide when to buy your new Atari ST computer, we suggest you consider very carefully WHERE you buy it. There are MANY companies who can offer you a computer, a few peripherals and the top ten selling titles. There are FEWER companies who can offer a wide range of products for your computer and expert advice and help when you need it. There is ONLY ONE company who can provide the largest range of Atari ST related products in the UK, a full time Atari ST specialist technical helpline and in-depth after sales support, including free newsletters and brochures delivered to your door for as long as you require after you purchase your computer. That one company is Silica Shop. We have been established in the home computer field for ten years with an annual turnover in excess of £8 million and can now claim to meet our customers requirements with an accuracy and understanding which is second to none. But don't just take our word for it. Complete and return the coupon below for our latest literature and begin to experience the Silica Shop specialist Atari service.

**SILICA STARTER KIT:** Worth over £200, FREE with every Atari ST computer bought from Silica.

**PROFESSIONAL PACK:** Free business software with 1040ST-FM and MEGA ST's bought from Silica.

**DEDICATED SERVICING:** 7 full-time Atari trained staff with years of experience on Atari servicing.

**THE FULL STOCK RANGE:** All of your Atari requirements from one place.

**AFTER SALES SUPPORT:** The staff at Silica are dedicated to help you get the best from your ST.

**FREE CATALOGUES:** Mailed direct to your home as soon as we print them, featuring offers as well as all of the new releases.

**FREE OVERNIGHT DELIVERY:** On all hardware orders shipped within the UK mainland.

**PRICE MATCH PROMISE:** We will match competitors on a 'same product same price' basis.

**FREE TECHNICAL HELPLINE:** Full time team of Atari technical experts always at your service.

## FREE SILICA STARTER KIT WORTH OVER £200

WITH EVERY ST - RETURN COUPON FOR DETAILS  
ALL PRICES QUOTED INCLUDE FREE UK DELIVERY



# COMPUTER CHAOS

A selection of computers which perpetrate disasters from the copious annals of Mel Croucher

## WELLINGTON, NEW ZEALAND

Victoria University student grants are computerised, in order to pay by direct credit into students' accounts – administered by the University Bank.

A single human error at the Bank of New Zealand central computer results in a weeny change in programming. 4,700 students are debited a total of A\$2,000,000 instead of being credited.

Computers at the students' bank then automatically honour the debits, resulting in overdrafts. This happens even though a Bank of New Zealand operator spots a conflict in the program instructions, but assumes that "students are always in debt, so I just hit the button!"

(The Dominion)

## STOCKHOLM, SWEDEN

There is an epidemic of stealing pleasure boats, so a law is passed to register all sailing and motor boats, with a computer database financed by a modest boating tax.

The epidemic turns into a plague, due to Sweden's public information laws concerning computer data access. Thieves can dial up any boat registration number along with the legal owner's name, address and national ID code, allowing them to impersonate the owner when stealing and selling a boat.

(Dagens Nyheter)

## NORTH TYNESIDE

After six months of computerised monitoring at a cost of half a million pounds, the results of the probation service experiment in electronic tagging of criminals is made known.

Ankle bracelets give off radio signals that are monitored by computers via home telephone links, to ensure that those on probation obey curfews and part-time house arrest.

When all the cases are checked, 55 per cent of criminals have either absconded or are in custody after being nicked for further crimes. Meanwhile, one electronic tag is found strapped to a radio-controlled toy car, and another is happily confused wrapped up in an electric blanket.

(BBC Radio-4)

## LONG ISLAND, NEW YORK

24 pay-phones along the Long Island Expressway are linked to the network billing system. Due to programming error, the computer believes they are free-phones.

State police become suspicious several days later when they arrive to investigate an unrelated shooting incident only to discover long queues of would-be telephone users lined up all along the Expressway.

One queue consists of fifteen Pakistani men waiting to phone home. Estimates of the unrecovered costs of the phone calls run to hundreds of thousands of dollars.

(San Francisco Chronicle)

## NO COMMENT

"Correction: because of the simplicity of a computer programme (sic) logic, the Labour Party's successful candidate in the London South West seat of the European elections was incorrectly printed on Monday as Ms A J Tournoutack instead of Ms A J Pollack. This is because the computer had been programmed to automatically change the work 'Poll' into 'Turnout'."

(Tuesday Guardian)

"Correction: the Labour Party's successful candidate in the London South West seat of the European elections was incorrectly printed on Tuesday as Ms A J Tournoutack..."

(Wednesday Guardian)

# NEXT WEEK

## PCs: THE STORY CONTINUES

Our series on PC-compatibles continues with a look at displays and keyboards

## ON THE MOVE

The definitive *Express* guide to choosing the best software for your portable

## VERRAN AC DATA LINK

An electrifying alternative to local area networks

# PLUS

- The Shopping Express guide to buying a PC – 50 top models reviewed
- Tech Tips: technical advice with the human touch
- Letters: The best debate outside of Parliament

# WITH

A column for your machine. Expert correspondents on ST, PC, Amiga, C64, Spectrum, Archimedes, BBC, MSX, QL, PCW, XE and CPC

# AND

Six pages of up-to-the-minute news

## MAKE SURE OF YOUR COPY OF NEXT WEEK'S EXPRESS

Hand this form to your newsagent to get your copy of *Express* next Thursday

**TO THE NEWSAGENT:** Please deliver to me / reserve for me (delete as applicable)

\_\_\_\_\_ copies of *New Computer Express*

**NAME** .....

**ADDRESS** .....

# STAY AHEAD WITH EXPRESS



ANNOUNCING THE NEXT GENERATION OF PBP GAMES

STEVE JACKSON'S

# GLADIATORS

## OF THE ROMAN EMPIRE

*Your opponent falls!  
He's badly wounded!  
He can't continue!  
Yes! HABET!*

*He holds his finger up  
in a plea for mercy!  
The choice is yours.  
Spare his life?  
Or finish him off?  
What would YOU do?*



### FIGHT YOUR FRIENDS TO THE DEATH! USE MATCH-UP CODES!

If you wish to fight a friend through the Gladiators of the Roman Empire computer, you must first of all:

- Decide a 4-figure Match-Up Code between you. A number you will both remember.
  - Arrange to dial in at the same time.
- As you enter the game, you can enter your Match-Up Code. If you do so, you will ONLY fight an opponent with the same Code.

So settle your differences in the noble way in a battle to the death in the arena!

In this fast-moving interactive telephone game from Steve Jackson, creator of FIST, YOU control your gladiator in a kill-or-be-killed battle to the death. Your opponent? You may fight the infamous Spartacus (controlled by the computer), whom you will find to be a difficult opponent. You may fight another caller. Or, if you chose to create a Match-Up Code, you may even fight a friend who has arranged to call in at the same time! Your instructions - which body area you wish to attack and which you will defend - will be carried out faithfully by your gladiator. And you will HEAR the moans, the screams and the roar of the crowd as sword meets flesh! The game couldn't be simpler to understand. First choose your gladiator from an authentic list of real gladiators from history. Then enter the arena....

### COMBAT SYSTEM

Dial in two numbers from 1-4 each combat round to represent where you will attack and defend. 1-2-3-4 equals Head-Body-Arms-Legs. The computer does the rest. Listen to the commentary to find out whether your attack was successful. Hint: The area you choose to defend is not the only area you guard. You will also defend one of the two adjacent areas as well.



0898-800-891





TM

**BATMAN** is a shadow in the darkness, as elusive as a dream. High above the seamy streets of GOTHAM, he is a criminal's nightmare. The only hope for a desperate city – BATMAN.

"Go with a smile and get this extravaganza (probably better than the film!) What a game! ...another excellent movie tie-in from Ocean." Crash



"One of the year's best C64 games! THE Film tie-in for quality, presentation and slickness. A wonderful package with an incredible atmosphere to match." ZZap



"a faithful, supremely well executed and generally wazzy film conversion as you could ever hope to see" Your Sinclair



SPECTRUM, COMMODORE, AMSTRAD: £9.99 AMIGA: £24.99 ATARI ST: £19.99

TM & © 1989 DC Comics Inc.

THE LONGEST RUNNING NO 1

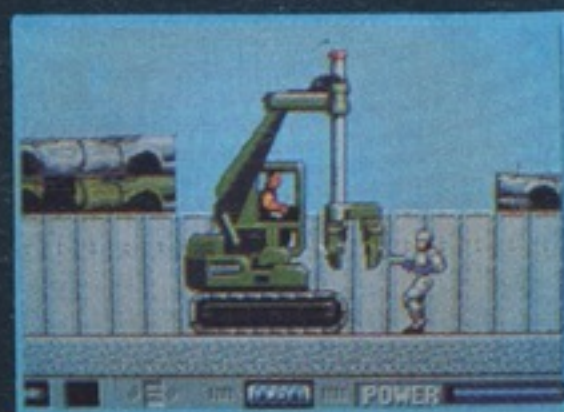
**ROBOCOP**™

THE HOTTEST COIN-OP  
NOW FOR YOUR HOME MICRO



"This is definitely the best film tie-in to date, and is an utterly superb game in its own right – don't miss it."

PART MAN... PART MACHINE  
ALL COP... ROBOCOP



**ocean**

SPECTRUM  
**£9.95**  
COMMODORE  
**£9.95**  
AMSTRAD

AMIGA  
**£24.99**  
ATARI ST  
**£19.99**

TM & © ORION PICTURES CORP.  
ALL RIGHTS RESERVED.